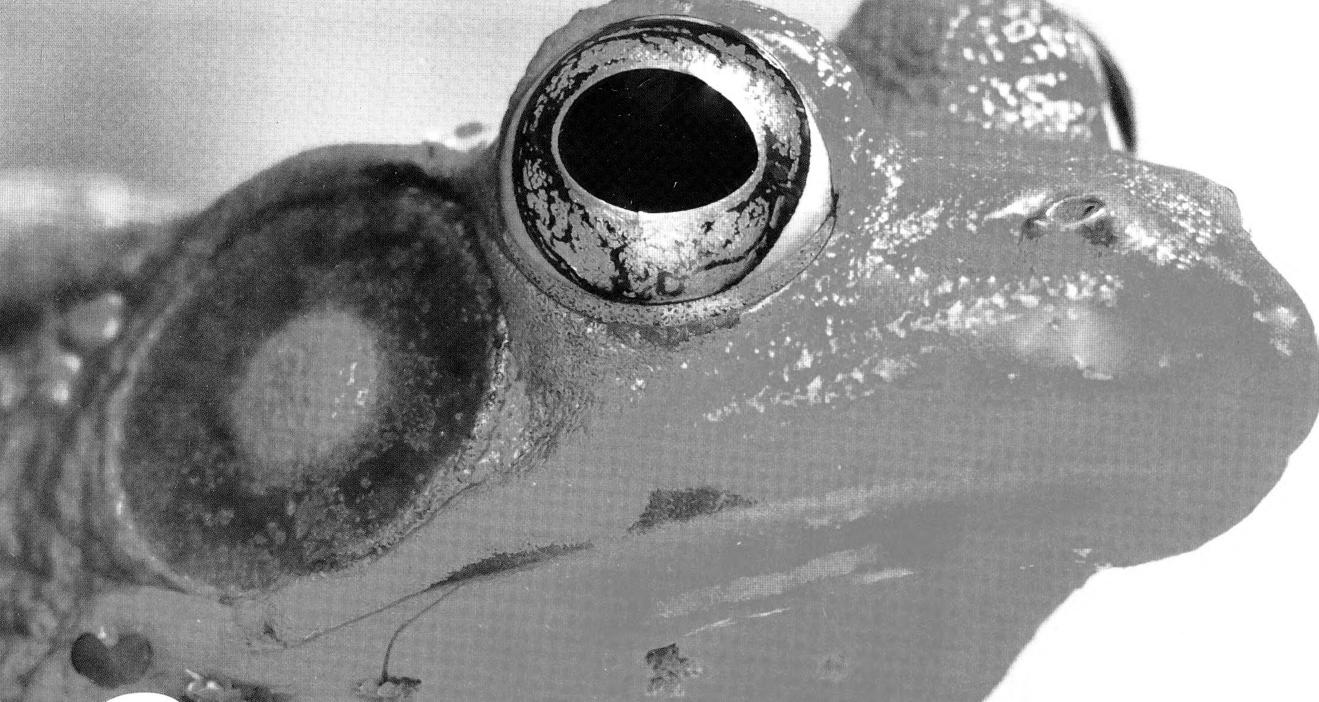
SMITHSONIAN Output Description: SPRING 2015



SOMSS Spring

Hidden in the soundtrack of spring are important clues about environmental health.

- » Get the Scoop on Quarantine
- » Explore the Small Mammal House
- » Meet the Zoo's Striped Skunks



JOIN US MAY 14 FOR A FUNDRAISER YOU CAN REALLY SINK YOUR TEETH

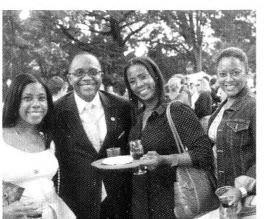
INTO. With more than 100 of the area's top restaurants, ZooFari is an evening of gourmet food, fine wines, and first-class entertainment. Proceeds benefit the Zoo's conservation programs. Buy your tickets at fonz.org/zoofari or call 202/633-3042. It's feeding time!



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FrogWatch & Listen

From the tiniest spring peeper to the largest and loudest American bullfrog, frogs and toads sing a springtime chorus to attract mates. By listening in, biologists and citizen scientists gain valuable insight into the health of our aquatic ecosystems.

BY CRISTINA SANTIESTEVAN

22 Small Mammals, Big Deal

BY BRITTANY STEFF

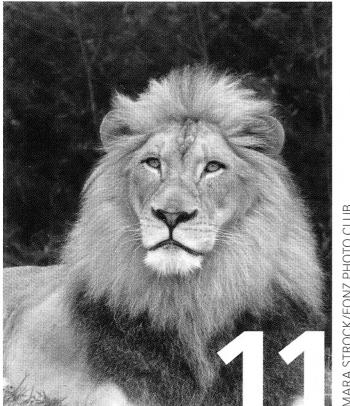
The animals in the Zoo's Small Mammal House may be tiny, but their stories and personalities are immense. Take a stroll through the exhibit and meet some of the Zoo's smallest residents.

28 The Battle for Biosecurity

BY PETER WINKLER

For new Zoo arrivals, quarantine is a must. Quarantine allows time for new animals to acclimate to life at the Zoo, while veterinarians assess their health and nutritionists refine their diets.









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From Kids' Farm to SCBI, FONZ offers educational opportunities for children and adults of all ages.

4 From the Zoo

The Smithsonian reveals new procedures to ensure the safety of its guests during high visitation days.

Campaign for the Zoo

The Zoo is raising \$80 million for species survival. Fully 25 percent of those funds will be dedicated to establishing endowments to support key scientific and leadership positions.

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Lions and tigers and bears and much, much more.

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North America's largest land animal takes a rest along Olmsted Walk.

ZOOZOCI



is the dedicated partner of the Smithsonian's National Zoological Park. FONZ provides exciting and enriching experiences to connect people with wildlife. Together with the Zoo, FONZ is building a society committed to restoring an endangered natural world. Formed in 1958, FONZ was one of the first conservation organizations in the nation's capital.

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Smithsonian National Zoological Park is located at 3001 Connecticut Ave., N.W., Washington, D.C., 20008-2537. Weather permitting, the Zoo is open every day except December 25. For hours and other information on visiting the Zoo, go to nationalzoo.si.edu.

Membership in FONZ supports the animal care, conservation, and educational work of the Smithsonian's National Zoo. It also offers many benefits: a Smithsonian Zoogoer subscription, discounts on shopping and events, discounted or free parking, and invitations to special programs and activities. To join, call 202.633.2922, or visit fonz.org/join.

Membership categories

Green	\$55
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Premier+	\$110
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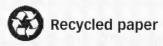
On the cover: Green frogs are often seen and heard in the

D.C area.

PHOTO BY CRISTINA SANTIESTEVAN

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The Smithsonian's National Zoo is accredited by the Association of Zoos and Aquariums.



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"IN THE END, WE WILL CONSERVE ONLY WHAT WE LOVE, WE WILL LOVE ONLY WHAT WE UNDERSTAND, AND WE WILL UNDERSTAND ONLY WHAT WE ARE TAUGHT." These words are as true today as when Senegalese conservationist Baba Dioum spoke them in 1968. They help explain why FONZ takes deep pride in our role as the educational partner of the Smithsonian's National Zoo.

For many of the Zoo's youngest visitors, conservation education begins at Kids' Farm, sponsored by State Farm®. As you may recall, FONZ was instrumental in securing that sponsorship, which allowed this family favorite to remain open. State Farm® truly "helped saved the farm!"

During April, we'll be celebrating Kids' Farm Month. Bring your family to special animal-grooming opportunities, talks and demonstrations by Zoo keepers, special giveaways, story time, and more. Your family will have a fun time, delighting in the natural world and beginning to appreciate the need to preserve it. Learn more about Kids' Farm Month at fonz.org/kidsfarm.

As children grow, so do the learning opportunities we provide for them. A few numbers from 2014 illustrate the range and reach of our award-winning programs—now being filled for this year:

- 47 children's classes: 450 participants, ages 2-10
- 5 weeks of our residential FONZ Nature Camp in Front Royal: 180 campers, grades 5-10
- 8 weeks of Summer Safari Day Camp: 825 campers, grades K-7
- 32 Snore & Roar educational overnights: 600 guests
- 265 birthday parties: nearly 4,000 multigenerational guests

These fun, informal educational opportunities can help deepen your family's sense of connection to animals and their essential place in the natural world.

Finally, there's the learning that occurs when you visit the Zoo and encounter any one of our hundreds of dedicated volunteers who are pleased to answer your questions, deepen your knowledge, and enhance your appreciation of the natural world.

If you can't make it to the Zoo as quickly as you like, go to our website to view Other Duties as Assigned: The Secret World of Zoo Jobs. This is a set of four online videos in which Zoo staff share what it's like to work at the Zoo. Find these short videos at fonz.org/zoojobs.

From a toddler's thrill to pet a goat, to an elementary student's journey into the world of predators, to a visitor's conversation with a volunteer interpreter about how best to end the illegal ivory trade, we continue to help generation after generation to understand, love, and conserve our fragile and fascinating natural world.

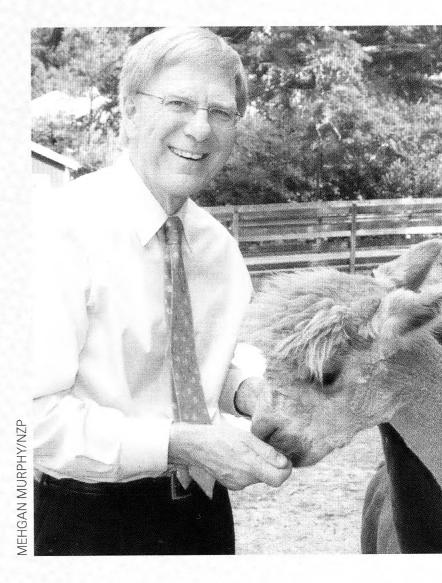
We deeply appreciate your interest and support.

Sincerely,

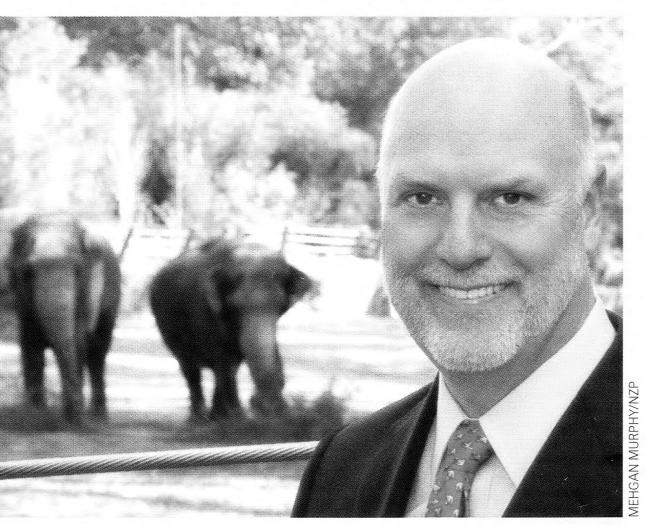
Bob Lamb

Executive Director, Friends of the National Zoo

Sol Lamb



FROMtheZOO



"SPRING'S GREATEST JOY WITHOUT A DOUBT IS WHEN IT BRINGS THE CHILDREN OUT," wrote the popular poet Edgar Guest.

My colleagues and I see that firsthand each year at the Zoo. The number of daily visitors soars from several hundred in January to more than 25,000 in April, when spring break coincides with D.C.'s tourism peak. The park pulses with energy and enthusiasm as families, friends, and school groups encounter Earth's magnificent biodiversity.

With those great numbers come great responsibilities. Paramount among them is ensuring the safety of our visitors, our staff, and our animals. This is particularly urgent given troubling incidents at and near the Zoo last year. Consequently, we have been working closely with the Smithsonian's leadership, especially its Office of Protective Services, local law-enforcement agencies, and community groups to identify new security strategies.

Out of this work emerged a twofold approach for increasing security during peak visitation. The first strategy, to prevent overcrowding, will

be to limit the number of visitors entering the Zoo on high-volume days.

Our second strategy will be to institute seasonal security checkpoints akin to those at our sister Smithsonian sites. Guards will inspect visitors' bags, and we may also ask guests to step through metal detectors. These measures, our research revealed, offer the most feasible and cost-effective way of protecting public safety.

The Zoo will implement this security solution during local schools' spring-break periods. While these measures are being tested, we'll do our best to keep you informed on upcoming news regarding Zoo security and ensure that FONZ members have the easiest possible access.

My colleagues and I realize that these new security steps may take some adjustment. I know you are used to strolling into the Zoo through one of many convenient entrances. Some days, entrances will be limited, and there may be a short waits like those at museums or even Disneyland. We regret any inconvenience the new policies may cause. But we trust that you join us in our determination to create a safe space for all the species—including Homo sapiens—in our care.

Our work of caring for species has been enriched by several new staff appointments.

Suzan Murray, who served as the Zoo's chief veterinarian from 2001 to 2014, now leads the Smithsonian Wildlife Health initiative, which monitors the well-being of wild animals and researches effective responses to disease outbreaks.

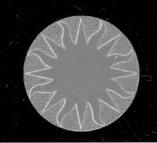
Succeeding Murray at the helm of the Zoo's veterinary staff is Donald Neiffer, who comes to Rock Creek from The Wilds in Cumberland, Ohio, where he served as head veterinarian and director of conservation medicine. Before that, Neiffer spent 16 years as veterinary operations manager for Walt Disney World's Animal Programs. You can learn more about him on p. 35.

Another vital addition to the Zoo's leadership team is William Pitt, the new deputy director of our research arm, the Smithsonian Conservation Biology Institute. An entomologist and expert in combating invasive species, Pitt will oversee the management of SCBI's five science centers, research programs, facilities, and finances, along with the operations of the Smithsonian-Mason School of Conservation.

Between our new approach to ensuring our visitors' safety and these superlative additions to the Zoo's leadership team, I am confident that a great spring awaits us, and I invite you to come be part of it.

Sincerely,

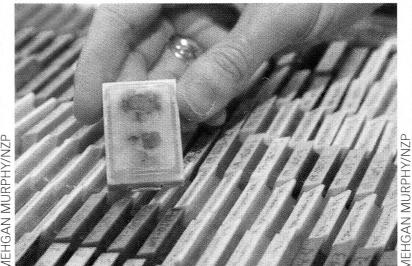
Director, Smithsonian's National Zoological Park



SmithsonianCampaign









\$80 million \$43.89 Represents donations received as of November 30, 2014.

SCBI DIRECTOR: FUNDED!

Thank you to John and Adrienne Mars, who recently gave \$5 million to endow in perpetuity the position of director at the Smithsonian Conservation Biology Institute. The position provides leadership for all the species-saving science conducted at SCBI and by its scientists around the world, and is currently held by Steve Monfort.

Endowments for a Lifetime of Saving Species

An update on the Smithsonian's National Zoo's campaign to raise \$80 million for species survival

The Smithsonian Institution was born of a donation. In his will, English scientist James Smithson left his entire fortune to the United States government, with the following instructions:

"I then bequeath the whole of my property ... to the United States of America, to found at Washington, under the name of the Smithsonian Institution, an Establishment for the increase & diffusion of knowledge."

That original gift made possible the Smithsonian Institution, which today comprises 19 museums, nine research centers, and the Smithsonian's National Zoo. Although the Smithsonian receives federal funds, more than half of its operating expenses are provided by private gifts, grants, and earned revenue. This is also true for the Zoo and the Smithsonian Conservation Biology Institute.

This is why endowments matter. An endowment creates a permanent source of funds to support a position, exhibit, or program. It is an investment in the people, animals, and conservation research programs that are valued so highly at the Zoo. With strong endowments in place, the Zoo can be secure in its ability to attract and retain the world's leading biologists, veterinarians, educators, and more.

Your donation will help support the establishment of these endowments.

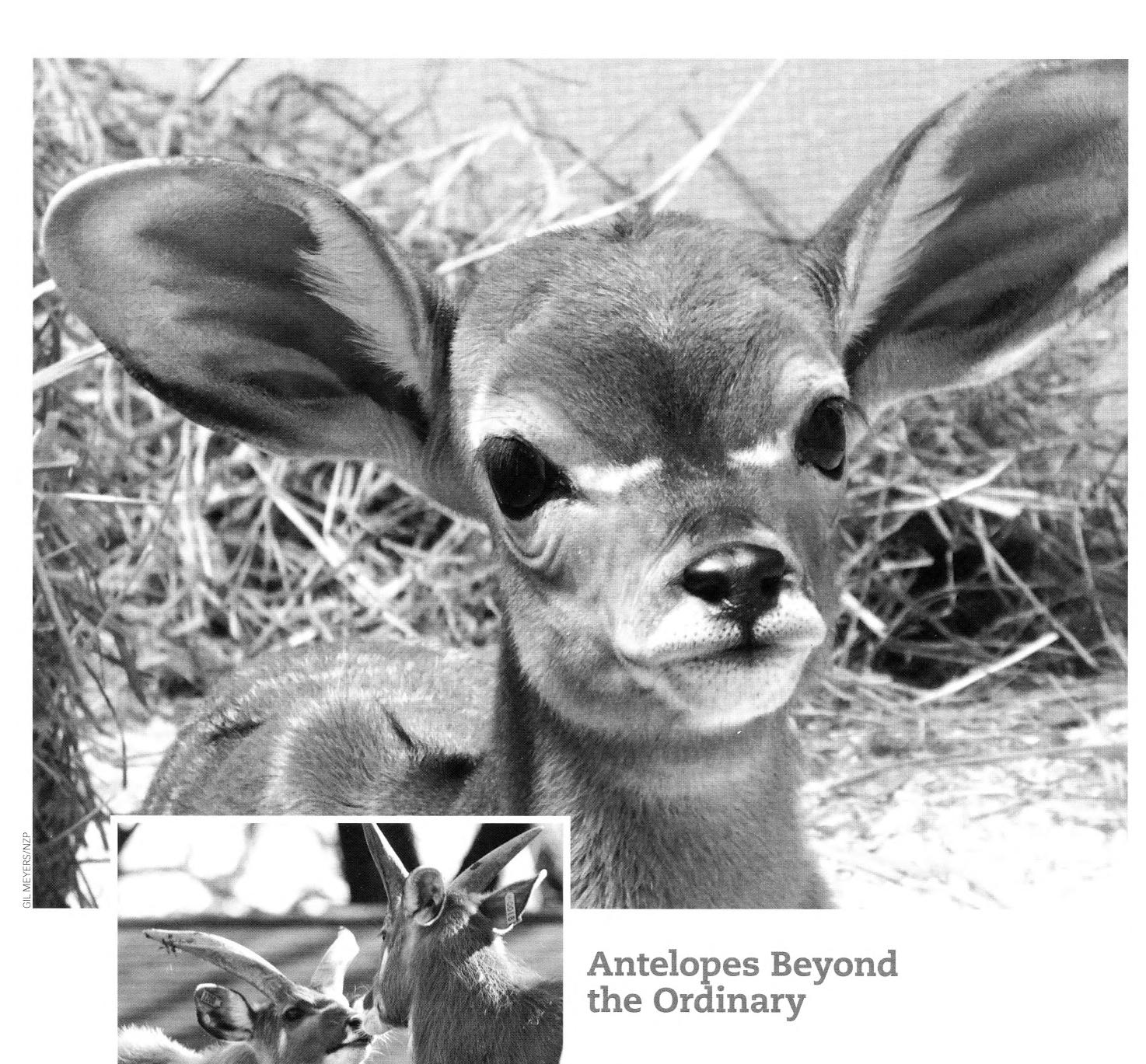
Donate online: fonz.org/zoocampaign

The Zoo offers benefits and naming opportunities to donors who make gifts to endow programs and positions.

Learn more: Lesli Creedon

202.633.3022 creedonl@si.edu

ZOONEWS



Sitatungas and lesser kudus are both antelopes from Africa,

but neither species looks like what most people imagine when they hear "antelope." Sitatungas are also called marsh bucks, because they live in swampy, marshy areas. They have shaggy, water-resistant fur and long toes, which help provide stability while moving through swampy areas. Kudus, in

contrast, are found in Africa's arid scrubby forests. They have white stripes along their sides and flanks, and the males sport long, spiraled horns.

Both species can be seen in separate exhibits in the Cheetah Conservation Station; the sitatungas share a yard with the red river hogs, while the lesser kudu shares a yard with the hornbills. When you visit this spring, you may see new faces in each yard: Waldo, a two-yearold sitatunga from the Mesker Park Zoo, and Garrett, a four-year-old lesser kudu from the Maryland Zoo.

May 14: Mark Your Calendar for Delicious Food and Wild Fun

η aving species can be delicious. That's what happens when you join FONZ for the biggest and most appetizing Zoo fundraiser of the year: ZooFari, presented by GEICO®. You'll be free to wander the Zoo after hours, sampling food and drink from the region's best restaurants. You'll meet some of the Zoo's animals, watch great performances, and have the chance to bid on artwork, vacation packages, behind-the-scenes Zoo tours, and more in the ZooFari silent auction.

Best of all, you'll do all this knowing that your ticket purchase supports the Zoo's work to save species in D.C. and around the world.

FONZ members get first dibs on tickets!

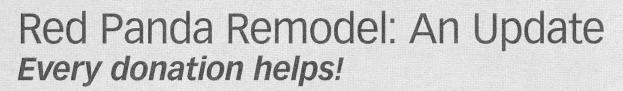
Tickets are available for FONZ members before the general public. Get your tickets online: fonz.org/zoofari

ps. The FONZ 2015 calendar misprinted the date for ZooFari. The event will be May 14. Please update your calendar.

BEFORE YOU BUY YOUR TICKETS

Visit fonz.org/zoofari for exclusive members-only savings. Invite some friends and save big on each ticket!





WHAT: A campaign to build a new climate-controlled indoor retreat for the red pandas on Asia Trail.

WHY: In the past, red pandas used a vacant enclosure in the Giant Panda House as a retreat from the elements. Soon, that space will become Bao Bao's new home. This campaign will help pay for a new indoor retreat designed especially for red pandas.

WHO: You! Whether you can donate \$10, \$100, or more, every donation brings us closer to our goal for a comfortable new indoor home for the Zoo's red pandas.

WHEN: Right now! The Zoo will begin its red panda renovations soon, which means this is the best time to donate and support their efforts.

How: It's easy. Donate online:

fonz.org/redpandaretreat

Thank you to everyone who has already contributed to our red panda renovation campaign! Your gift will help the Zoo build a much-needed climate-controlled retreat for red pandas on Asia Trail.



ZOONEWS



HAPPY BIRTHDAY, REMI!

It's been a big year for sloth bear cub Remi, who was born December 29, 2013 to mom Khali and father François. She was the only cub of three to survive longer than seven days, and then her keepers made the decision to hand-rear her in order to better guarantee her survival. The little cub thrived in the care of her keepers, and today Remi weighs in at more than 125 pounds. The yearling is smart, goofy, and playful.

Read more online: fonz.org/remi

WILD INSIDE THE NATIONAL ZOO

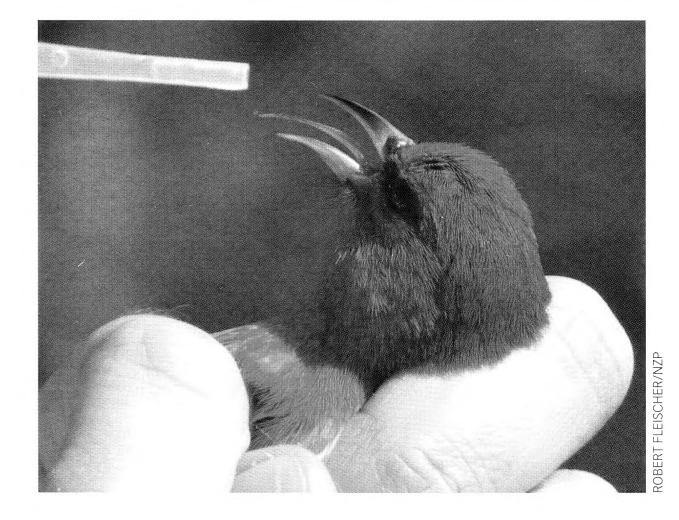
Venture behind the scenes at the National Zoo with the latest episodes from the Smithsonian Channel web series, Wild Inside the National Zoo: Raising Red Pandas, Saving the Last Wild Horses, and Reptile Rejuvenation.

New episodes are available monthly, while weekly video podcasts answer viewers' questions about the animals, science, and more found at the Zoo.

Watch online (fonz.
org/wildinsideNZP) or
download the free video
podcast via iTunes.

Milestone in DNA Research

or the very
first time,
scientists with
the Smithsonian
Conservation
Biology Institute
have sequenced the
entire genome of a



vertebrate: the Hawaii amakihi. This small colorful bird sports a hooked bill—all the better for extracting nectar from flowers—and is one of more than 50 species of Hawaiian honeycreepers. Of those 50 species, more than 30 are now extinct due to habitat loss, invasive pests, and introduced diseases.

For this study, SCBI conservation geneticists Taylor Callicrate and Robert Fleischer sequenced the genome of a female Hawaii amakihi that has lived with avian malaria—an often fatal disease—for some time. This choice was deliberate. The fact that she has survived this long suggests that something about her genetics or physiology allows her to tolerate malaria better than other birds might. Callicrate and Fleischer hope that her genome might provide clues that could help biologists better understand how avian malaria affects birds and perhaps even how to help birds survive the disease.

Read more online: fonz.org/honeycreepergenome



Bao Bao got her first taste of snow on Tuesday, January 6. Her adorable reaction was caught on film. fonz.org/baobaosnowday

TEENAGED TIGERS

he Zoo's tiger cubs—Bandar and Sukacita are a year-and-a-half old, and they're already showing signs of independence and maturity. Although tigers aren't considered full grown until they are about three years of age, the cubs may reach sexual maturity at a younger age. Because there is no obvious sign of when this might happen, the tigers' keepers have separated Bandar from his mother, Damai, and sister. He still visits occasionally with Damai through a howdy door—a mesh door that allows visual contact but no physical contact—but Bandar is mostly living the life of a young bachelor. This mimics what his life would be like in the wild young male tigers generally leave their mothers at around a year of age.

Sukacita still spends time with her mother during the day, when the pair can be observed by the Zoo's tiger keepers, but they sleep in separate quarters at night. This is because their relationship could change suddenly when Sukacita goes into estrus for the first time. When that happens, Sukacita will also be separated from her mother, who may begin viewing her as a rival for breeding partners.

The cubs will likely remain at the Zoo for another year or more before the Association of Zoos and Aquariums makes a breeding recommendation for them. At that point, they will probably move on to new homes to become parents themselves.

Read more online: fonz.org/teenagedtigers



Bozie Gives One-Trunk-Up for Coconut Water

In late September 2014, Bozie began showing colic-like symptoms. Blood tests revealed that she had an infection, which was affecting her appetite. The Zoo's veterinarians and elephant keepers put her on an antibiotic regimen and regularly administered fluids and medical treatments.

Under the constant watch of her caregivers, Bozie steadily improved. By November she was again eating well and acting like herself, and the Zoo's veterinarians discontinued all but one of her medications. Although her caregivers continue to monitor her health, Bozie shows every sign of a full recovery.

In addition to medication, Bozie was also given coconut water during her illness and recovery.

Just as with people, animals can become dehydrated while sick. And just as sports drinks—especially those high in minerals and electrolytes—can help people feel better during or after an illness or stressful event, they can help animals too.

Bozie's keepers and veterinarians chose coconut water because it has less sugar, more minerals, and a better balance of electrolytes than most other sports drinks. When Bozie's need became clear, the Coca-Cola Company generously donated 20 cases of its Zico coconut water. The coconut water helped keep Bozie hydrated, restored her electrolytes, and made it easier for her to take her medication, all of which supported her well-being throughout her treatment and recovery. Thank you to the Coca-Cola Company for helping Bozie feel better and recover faster!

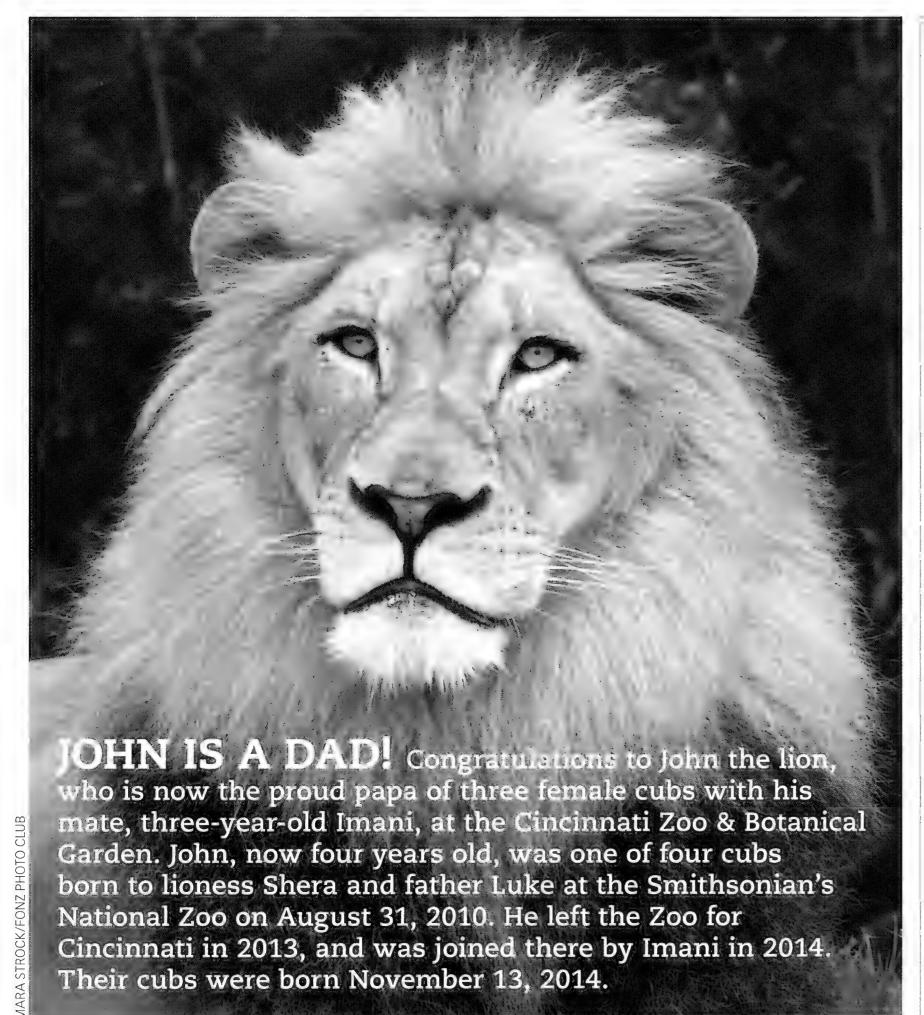


Sweet Serpents

Two tiny snakes slithered from their eggs and right into our hearts on November 6, 2014. The Timor python hatchlings each weighed less than a pound when they hatched. They will eventually grow to a length of five to eight feet, and may weigh as much as 20 pounds. The baby snakes may go on exhibit later this year. Check fon a org often for updates.







Bouncing Baby Bears!

Congratulations to Billie Jean the Andean bear, who is again a mother to two healthy cubs. The two cubs were born November 10 and 11, and are Billie Jean's third litter and fifth and sixth cubs. As with her past cubs—Curt and Nicole, and Bernardo and Chaska—Billie Jean is proving to be a gentle and attentive mother.

The cubs' father is 22-year-old Cisco, who came to the Zoo in September 2013 from the Queens Wildlife Center in New York. The two bred in April 2014, and Zoo veterinarians and keepers began conducting ultrasounds in late August. In mid-October, an ultrasound revealed two live fetuses. The cubs were born a month later.

Mother and cubs are all doing well, and will likely begin venturing into their outdoor yard sometime this spring. In the meantime, visitors can see Cisco on exhibit near the lower entrance to American Trail, weather permitting. Visit fonz.org often for updates.



Farewell to Juvenile Andean Bears

The time has come to bid a fond farewell to the Zoo's two-year-old Andean bears, Curt and Nicole. Both bears have been living independent of their mother, Billie Jean, since May, 2014. Now, the final preparations are being made so that the two can move on to new homes, where they will hopefully someday have cubs of their own. Nicole will likely head to the Nashville Zoo this spring, while her brother, Curt, will go to the San Antonio Zoo. Their dates of departure are not finalized; check fonz.org often for updates.

Adventures with Polar Bears — National Zoo senior scientist Don Moore traveled to Canada's Hudson Bay to observe polar bears and moderate Polar Bear Week in late 2014. The region is home to an estimated 800 bears, which is a 25 to 30 percent decline since the 1990s. This decline is likely due to the fact that the ocean freezes later in the fall and thaws earlier in the spring than it used to. The bears must wait for

the ocean to freeze before they can hunt seals, their primary prey animal. Although it varies from year to year, the bears generally have 4 to 5 fewer weeks of ice habitat now than compared to the 1980s and 1990s. Scientists expect this population will ultimately disappear entirely in the face of climate change.

As moderator of Polar Bear Week, Moore spoke with several leading polar bear biologists and shared those conversations via webcast. Watch online:

fonz.org/polarbearweek

ENJOY THE SHOW, AND THE SHADE Zoo visitors will soon have the opportunity to escape the hot sun while watching animal demonstrations in the sea lion pool on American Trail. A new shade structure will be installed this spring, and will shade the entire pavilion area. Thank you to the American Academy of Dermatology for this generous donation.

ZOO'S SENIOR CURATOR OF MAMMALS SELECTED FOR LEADERSHIP TRAINING

Congratulations to Brandie Smith, the Zoo's senior curator of mammals and curator for giant pandas, who was selected to participate in the Association of Zoos and Aquariums 2015 Executive Leadership Development Program (ELDP). This prestigious and competitive program develops executive talent and leadership in individuals in AZA-accredited zoos or aquariums.



Mark Your Calendar

- Warch: Frog:Watch Training—Lend your ears to conservation with FrogWatch fortz org/frogwatch
 - Kids' Farm Month—klos receive special giveaways every weekend in April for Klos' Farm Mornin, sponsored by State Farm. Kids' Farm. 51 22 F 15
- April 6: Easter Monday: A Washington Family
 Tradition— Join FONZ at the Zoo for an Easter egg hunt, field games, and more. FASE, fonz org/eastermonday
- Enrichment Day—Discover the fun and preative forms of enrichment offered to the animals at the National Zoo. FREE,
- Migratory Sird Day-Meet scientists from Way 9 the Smithsonian Migratory Bird Center and learn all about the Zoo's upcoming Sint House renovation project. Bird House, FREE
- May 14: ZooFari, presented by GEICO"—Juin FONZ for the Wildest party in D.C. this spring! ZooFari features food and drink from more than 100 area restaurants, fabulous entertainment, animal demonstrations, and a silent auction. All proceeds support the Zoo, Thank you! Tickets available online. fonz.org/zoofari
- June XXX Summer Safari Day Camp Begins— Children explore the 200 while learning about the world of wildlife through FONZ's Summer Safari Day Camp. A new session starts every week from June 2 through August 14. Register online, fonz.org/camps
- Nature Camp Begins—Campers explore and discover local and global wildlife, conservation initiatives, research programs, and more at SCBI. One- and two-week sleepover camps available July 5 through August 8 for students entering grades 5-10. Register unline: fonznaturecamp.org

The SURVEY RESULTS are in! We asked. You answered. We're listening.

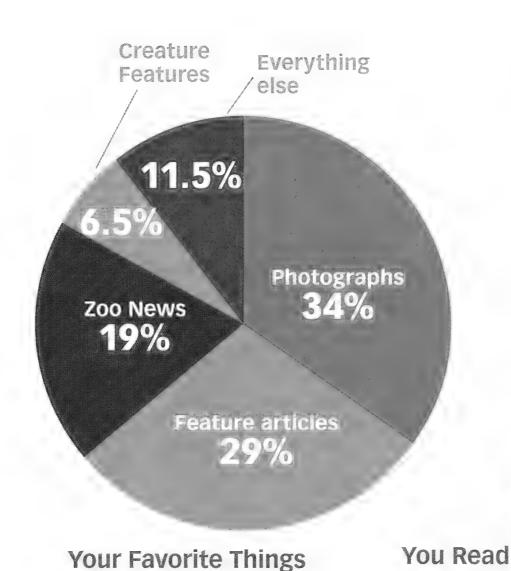
Smithsonian Zoogoer is your magazine. Last summer, we asked you to complete a survey about Zoogoer. And many of you did. Thank you! Your feedback will help us make Zoogoer into an even better magazine than it already is.

We are delighted to know that most of you already really like this magazine. That couldn't possibly please us more—we create Zoogoer especially for you, and knowing how much you enjoy each issue makes all our hard work worth it!

But, even a good thing can become better. Already, we have added eight pages to each issue. This may not sound like a lot, but it will allow us to make some significant improvements:

- >> More depth for our most important stories.
- >> More photos.
- >> More space for science.
- >> More stories from the Zoo. Many of you asked for more regular updates on Zoo exhibits and animals, and we are happy to oblige.
- >> And perhaps even more! Watch for improvements in upcoming issues.

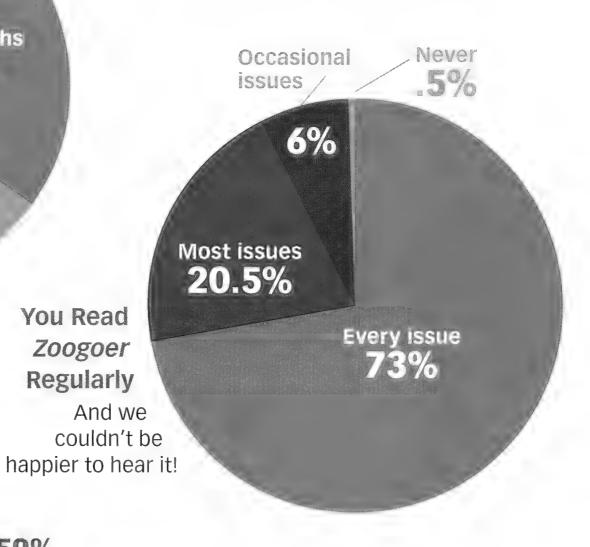
We are reading every single one of your responses to our survey, and are considering all of your ideas. If you have more suggestions for us, please let us know: zoogoer@fonz.org.



It's clear that you

value great photography and fun, informationpacked stories.

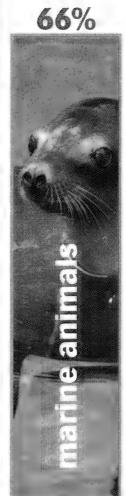
"I love reading about the Zoo's research, and I gobble up stories about the Zoo's conservation efforts. The photos are also always fantastic!"

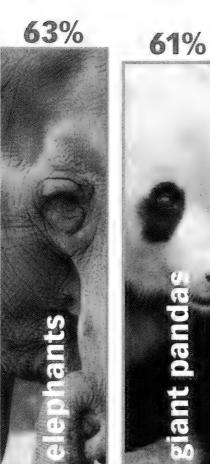


Pandas Are Popular.

It's no surprise. You love pandas. But, according to the survey, you love cats, marine animals, and elephants even more. Here is how you responded when we asked you to identify the animals you were very interested in learning more about.









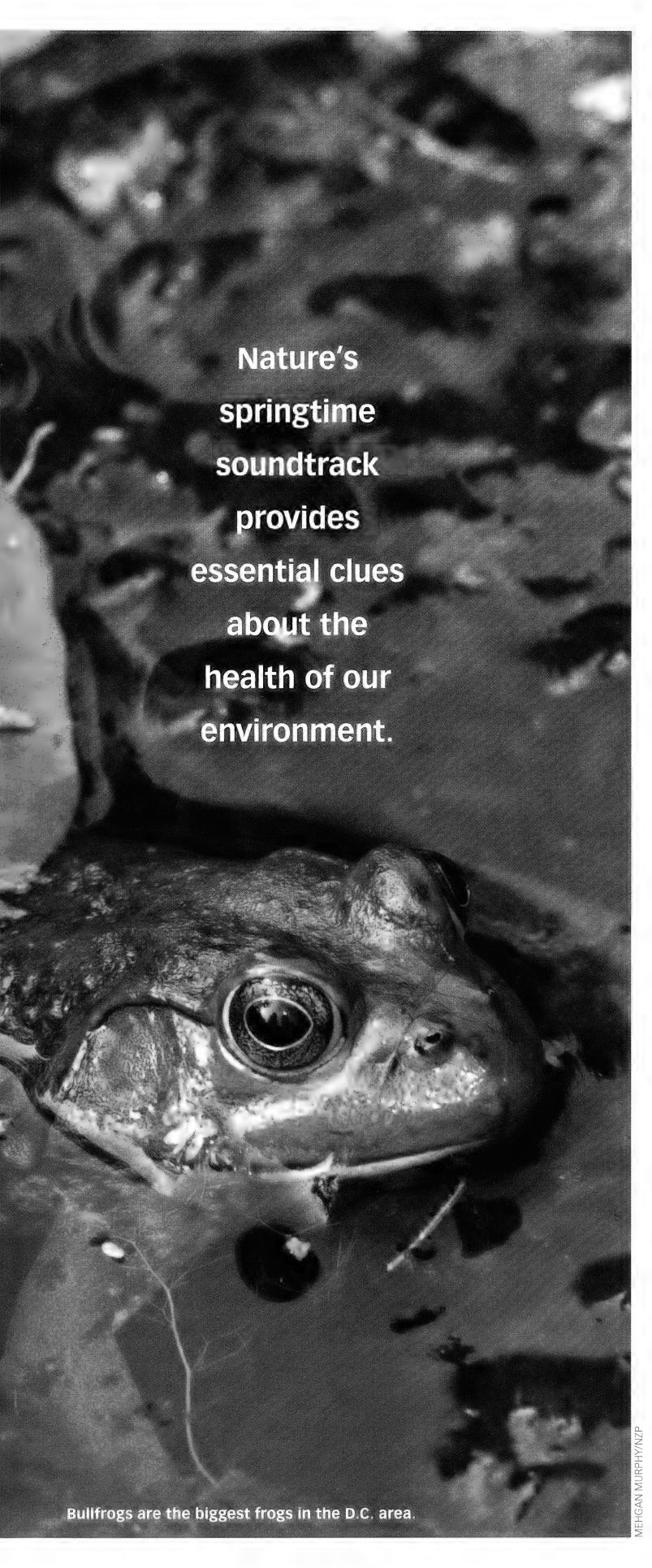








FrogWatch. EV DEISTINA SANTIÉSTEVAN



The chorus begins in February. It is a slow build, starting first with a twang that sounds a bit like a duck or chicken. March brings high-pitched peeps and trills, and a blend of chuckles and snores that add a bit of percussion to the mix. Then as spring spins toward summer, the earliest performers bow out, making way for a racket of honks, clicks, clacks, and jug-a-rums.

This is the music of the frogs and toads, love songs sung into the night by males hoping to attract a mate. Their performance runs six months or longer, beginning with the earliest wood frogs in February or March and running through to the bullfrogs' closing chords on the last of summer's balmy nights.

FrogWatch & listen

Put another way: Unless something changes very soon, the United States may lose half its frogs, toads, and other amphibians by the time today's toddlers graduate college.



Frogs and toads have provided the soundtrack of spring and summer for millennia. Now, research shows that fewer singers remain with every passing year. Their numbers are declining; our amphibian chorus grows quieter.

Defining the Decline

In 2013, the U.S. Geological Survey released a paper that confirmed many biologists' worst fears: The decline of amphibians in the United States was not imagined. Species were—and are disappearing from their habitats at the slow-but-steady pace of 3.7 percent per year throughout the country. Some of North America's most threatened amphibians were found to be declining at rates of more than 10 percent each year. Even relatively common species, such as spring peepers and Fowler's toads, were found to be declining in number and distribution. Most disturbing, the study found evidence that amphibians were even declining in protected areas, such as national parks or refuges.

The challenges facing frogs are numerous: habitat loss and destruction, declining water quality, invasive species, and introduced diseases. Climate change also cannot be ignored. Changing weather patterns increase the likelihood of droughts, floods, and extreme temperatures, all of which may affect amphibians' breeding success. Most likely, a combination of these threats—perhaps combined with some other yet unknown factor—is behind the widespread drop in amphibian populations across the United States.

The rate of decline seems small, but like the steady drip of a leaky faucet, that 3.7 percent could add up to substantial losses over the years. The USGS was blunt about the risk in the press release that accompanied their report: "If the rate observed is representative and remains unchanged, these species would disappear from half of the habitats they currently occupy in about 20 years."

Put another way: Unless something changes very soon, the United States may lose half its frogs, toads, and other amphibians by the time today's toddlers graduate college.

Adding up the Amphibians

"Rainy weather really brings out the amphibians," says Dolores Reed, a keeper with the Smithsonian Conservation Biology Institute and a participant with the Zoo's FrogWatch USA chapter. "On rainy nights, I have had to get out of my vehicle and remove frogs and toads from the road (and occasionally a snake or two following the toads!) on the way to and from the FrogWatch site while my husband drives."

Reed has been lending her ears to amphibian conservation for seven years, and is one of many who listened for frog and toad calls as a participant with the Zoo's FrogWatch USA chapter in 2014. Nationwide, more than 3,500 individuals donated their time through FrogWatch's 120-plus local chapters. Those 3,500 people listen for frogs and toads at more than 2,000 sites across the country. When tallied over the years, their results provide valuable insight into changing abundance and distribution for individual species.

"Amphibians are bioindicators," explains Zoo keeper Matt Neff, who coordinates the Zoo's FrogWatch USA chapter. "They are the canaries in the coal mine. Since they have skin that absorbs water and oxygen, they will absorb other things in their environment as well, including any toxic substances and other pollutants." This means amphibians, including frogs and toads, are often the first animals to show negative reactions to changes in their ecosystem. If frogs and toads suddenly become less common in a particular area, this warns scientists that something may be amiss in the local environment.

This is the beauty of FrogWatch USA. Not only does the program provide essential information about individual frog and toad species—including any that may be threatened or endangered—but





[:] Pickerel frogs (shown here) can be distinguished from leopard frogs by their reclangular spots. The spots on leopard frogs are more circular

DITTOM RIGHT: Despite their small size, spring peepers have suprisingly loud voices.

American toads, often seen in gardens and yards, only visit water to brend.



T TO RIGHT: Some green frogs are very green while others only show green on their snouts; green tree frogs have a distinctive white stripe on their sides; wood frogs are the earliest to sing in the D.C. area every spring.

"One of our first nights out, we heard three barred owls in a raucous debate at one of our sites. We were thrilled, but it made it a bit challenging to listen for frogs."

it also provides valuable insight into changing conditions across habitats and watersheds. If FrogWatch participants regularly hear five species at a particular pond for several years, and then only hear two species the following year, this may be a clue that something has damaged the quality of that habitat.

FrogWatch USA was founded by USGS and is now organized nationally by the Association of Zoos and Aquariums. The program has been collecting data for more than 15 years. Such long-term research projects are uncommon, but are also essential for tracking population changes over time. The data are tallied online at frogwatch.fieldscope.org, where it can be viewed by scientists and curious members of the public. The collected data help biologists track changes in frog and toad populations, and identify potential environmental challenges.





Training and Trusting Your Ears FrogWatch is a bit of a misnomer participants focus much more on listening than seeing. Anyone can learn to be a citizen scientist with FrogWatch. First, there is a training session, which teaches attendees to identify frog and toad species by their calls. "We learned the protocols and the local frogs and their voices, and we completed a proficiency evaluation at the end of training," explains FONZ education assistant and FrogWatch participant Sue Garvin. "But the real joy of the training session is listening to Matt Neff and his infectious enthusiasm for the little amphibians that sing in the night. I was especially impressed when he mentioned the tiny man-made pond in his backyard where he records observations! You don't need to drive hours to a wetland in a state park; there are FrogWatch opportunities all around us!"

In fact, the Zoo itself can be a prime spot for listening to frogs and toads, says Neff. "Even though the Zoo is in the middle of D.C., there are regularly American toads, green frogs, and bullfrogs that come to the ponds to call every year. All the ponds at the Zoo are artificial, but the frogs and toads are natural, native, and come to the ponds all on their own."

After passing their assessment, FrogWatch citizen scientists take to the field to listen. "I suggest going weekly," advises Neff. "It's not required, but it's easier to remember to observe every Tuesday, for example." Neff also encourages participants to select their own listening station—a close-to-home parking lot near a pond, for example.

For those who question their ability to identify frogs by sound alone, Neff offers words of encouragement. "There are only 14 different species of frogs and toads you could possibly hear in the D.C. metro area,

You Can Make a Difference

Listening with FrogWatch USA is one of many ways you can make a difference for frogs, toads, and other wild creatures:

Lend your ears. Sign up as a 2015 FrogWatch USA citizen scientist. Contact Matt Neff at neffm@si.edu for information about joining the Zoo's chapter, or visit frogwatch.org to find a chapter near you.

Choose organic. Lawn and garden chemicals can get into local bodies of water, where they harm frogs, toads, and more.

Plant natives. Adding a few native plants to your yard will attract wildlife.

Add a pond. Even tiny garden ponds can attract many frogs and toads.

Spread the love. Share your enthusiasm for amphibians with a child, parent, or friend.

FrogWatch & listen

D.C.'s Frogs and Toads __Matt Neff

Although it seems impossible to identify all the frogs based on their calls, there are only 14 species of frogs and toads native to the D.C. metropolitan area. Most of these 14 species have completely different calls from one another, and breed at different times of the year. This makes identification fairly easy. Here are descriptions of our 11 most common species:

AMERICAN BULLFROG (Lithobates catesbianus)

The bullfrog is the largest native frog in the United States, getting up to eight inches. It is so large it can eat other frogs and even birds. You can see bullfrogs in front of the Reptile Discovery Center at the Zoo. See photo on page 15.

WHERE TO LISTEN: ponds and lakes

WHEN TO LISTEN: May to August **SOUNDS LIKE:** Bullfrogs are the Barry White of the frog world. They have the lowest call of all local frogs. Sounds like "jug-arum."

AMERICAN TOAD (Anaxyrus americanus)

American toads have one of the prettiest calls of any of the local frogs; they are sometimes dubbed the opera singers of the frog world. Their call is a melodic trill that can last up to 20 seconds. American toads can get up to just over four inches long. See photo on page 16.

WHERE TO LISTEN: moist woodlands and vernal pools

WHEN TO LISTEN: March to July **SOUNDS LIKE:** melodic trill lasting up to 20 seconds



COPE'S GRAY TREE FROG (Hyla chrysoscelis)

This two-inch tree frog is one of the more brightly colored frogs in the D.C. area. It can range from a dark gray to an almost whitish gray to greenish coloration. Its inner legs are a bright yellow-orange. See photo on page 21.

WHERE TO LISTEN: wetlands and temporarily flooded areas

WHEN TO LISTEN: April to July **SOUNDS LIKE:** resonating trill lasting two seconds

EASTERN CRICKET FROG (Acris crepitans)

Eastern cricket frogs are one of the smallest of our local frogs, reaching a maximum length of just over an inch.

WHERE TO LISTEN: wetlands and temporarily flooded areas

WHEN TO LISTEN: April to August **SOUNDS LIKE**: clicking; marbles hitting each other

FOWLER'S TOAD (Anaxyrus fowleri)

Fowler's toads are easily confused with the American toad. You can tell the difference by their call or coloration: Fowler's toads have spots on their back with numerous warts per spot, while American toads have only one or two warts per spot. Can grow to three inches in length. WHERE TO LISTEN: moist woodlands and vernal pools

WHEN TO LISTEN: April to July SOUNDS LIKE: whiny, nasal call

GREEN FROG (Lithobates clamitans)

The green frog can grow up to four inches long. It can be any color from green and brown, and looks similar to a bullfrog. Look for the lateral ridge that runs down its sides: this ridge stops at the tympanum (eardrum) of the bullfrog, but continues down the back of green frogs. You can see green frogs call in the pond in the Zoo's cheetah yard. See photo on page 18.

WHERE TO LISTEN: ponds and lakes

WHEN TO LISTEN: May to August **SOUNDS LIKE:** banjo string

GREEN TREE FROG (Hyla cinerea)

Despite their name, green tree frogs can vary in coloration from brown to a bright green. They can grow to lengths of almost three inches. See photo on page 19.

WHERE TO LISTEN: wetlands and temporarily flooded areas WHEN TO LISTEN: May to July

SOUNDS LIKE: honking, clown

horn

PICKEREL FROG (Lithobates palustris)

Pickerel frogs look similar to leopard frogs, but have two parallel rows of squarish spots and lack the white spot in their tympanum. They grow to four inches long. See photo on page 17.

WHERE TO LISTEN: slow moving water and damp low-lying areas WHEN TO LISTEN: March to May

SOUNDS LIKE: rolling snore

SOUTHERN LEOPARD FROG (Lithobates sphenocephalus)

To identify southern leopard frogs, look for the random placement of circular spots and the white circular mark in their tympanum behind their eye. Southern leopard frogs can grow to four inches long.

WHERE TO LISTEN: slow moving water and damp low-lying areas WHEN TO LISTEN: March to June **SOUNDS LIKE:** series of chuckles followed by a growl

SPRING PEEPER (Pseudacris crucifer)

Spring peepers are a brownish tree frog with a dark "X" pattern on their back. Despite their small size—1.5 inches—they have a loud call that can be heard from quite a distance. See photo on page 17.

WHERE TO LISTEN: moist woodlands, vernal pools, and drainage or retainment areas

WHEN TO LISTEN: March to April **SOUNDS LIKE:** high-pitched peep

WOOD FROG (Lithobates sylvaticus)

Wood frogs are the earliest emerging frogs, and come out to breed sometimes even with ice still on the pond. They have an antifreeze in their blood and are the only frog species that can be found north of the Arctic Circle. They can grow to three inches long. See photo on page 19.

WHERE TO LISTEN: moist woodlands and vernal pools WHEN TO LISTEN: February to

April

SOUNDS LIKE: a mix between a duck and a chicken

and the majority of the frogs in the area have very distinctive calls, from the tiny peep of the spring peeper to the bellowing jug-a-rum of an American bullfrog." To ease the learning curve of new and returning FrogWatch citizen scientists, Neff has created a website with descriptions and recordings of the region's 14 frog and toad species: fonz.org/frogcalls.

Due to its relative simplicity, FrogWatch is an excellent opportunity for the whole family, including children. "Kids are more than welcome to join FrogWatch," says Neff. All children must be accompanied by an adult.

Significantly Fun

FrogWatch USA citizen scientists contribute significant and valuable information that supports conservation across the country. But they also have fun. Because the program focuses on frogs and toads, listeners must make their observations after dark, revealing a whole side of nature that is often goes unnoticed in today's world.

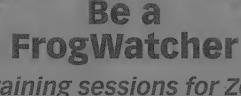
"Probably the biggest surprise for me is the other wildlife you become aware of when out frog watching," says Reed. "I have followed woodcock and snipe breeding seasons, and observed lightning bugs, bears and cubs, coyotes, foxes with kits, bobcats, deer, bats, raccoons, and skunks." Garvin agrees: "All the other things that go bump in the night are an added bonus to participating in Frog-Watch. One of our first nights out, we heard three barred owls in a raucous debate at one of our sites. We were thrilled,

but it made it a bit challenging to listen for frogs."

It's a delightful combination of outdoor fun and important science, and it's accessible to anyone who wants to give a few spring and summer evenings to the cause. By lending their ears to conservation, participants such as Reed and Garvin help scientists better track and understand changes in amphibian populations, and may even provide the information needed to again turn up the volume on nature's springtime soundtrack.

"My personal favorite is a pond that was always silent when we'd arrive," says Garvin. "Shortly after we settled into place, one frog would call. Then another would answer. And eventually there was a full chorus of mighty bullfrogs answering back to each other!"

—CRISTINA SANTIESTEVAN is an editor for Smithsonian Zoogoer.



Training sessions for Zoo FrogWatch participants will be held in D.C. and Front Royal, VA, this March. Contact Matt Neff for more



Their bodies may be little, but there's nothing tiny about these animals' stories or personalities.

ike the animals that live there, the Small Mammal House can be a little inconspicuous. Curator Steve Sarro says the building is easily overlooked because it is set back a bit off Olmsted Walk, behind a bronze statue of a giant anteater. Even people who notice the building often walk past, says biologist Kenton Kerns, who routinely hears people say, "Oh, Small Mammals. That's just the rats. Let's not go in there."

"And that's so sad!" Kerns exclaims. "I wish I could tell them, 'It's happenin' at the Small Mammal House."

And it is. Births, arrivals, new animals, and new exhibits—it's all happening at the Small Mammal House.

Curator Sarro elaborates: "At the Small Mammal House, we focus on the many, many frequently overlooked species. When people go to the Zoo, they think they want to see elephants, flamingos, bears, and lions. We show them that there are a ton of other animals that are just as cool that they haven't thought about."

Golden Oppotunities

The first animal you see—probably—when you walk in the front door of the Small Mammal House is an excellent symbol for the whole building. It's a golden lion tamarin. This fascinating animal definitely is *not* is boring. Nor is it a rat.

The golden lion tamarin is, in fact, a primate, one Sarro calls "our most storied animal." A very small, orange monkey, it is native to Brazil and is extremely endangered—only about 3,200 remain in the wild.

The fact that any remain in the wild at all is thanks, in part, to the work of the Small Mammal House and Smithsonian's National Zoo scientists. Research and breeding done at the Zoo—including a



program of free-range golden lion tamarins roaming the Zoo grounds—led directly to the successful reintroduction of these little monkeys back into the wilds of Brazil. These efforts led to the golden lion tamarin being reclassified from "critically endangered" to "endangered" in 2003.

Golden lion tamarins no longer roam the Zoo grounds at large, but visitors can still find more than a few in the Small Mammal

ABOVE The life-size giant anteater statue outside the Small Mammal house was installed in 1937. FACING PAGE: Golden lion tamarins are among the most popular residents in the Small Mammal House.

small mammals, big deal



Fennec foxes' huge ears help keep them cool in their desert climate by radiating body heat.

House, hanging from trees and delighting visitors with their antics.

A close relative, the golden-headed lion tamarin also lives in the Small Mammal House, just a few enclosures down. There may be even more of those soon—a new golden-headed lion tamarin is coming in

to pair with one already there. This could mean baby golden-headed lion tamarins in the House soon!

And tamarins aren't the only amazing animal hiding in the Small Mammal House.

An Icon Restored

Continue to your right from the golden lion tamarins and you'll find another kind of living symbol. Back when each area of the Zoo was represented by an icon, a fennec fox stood for the Small Mammal House. But fennec foxes haven't resided here for seven years—until now. A female fennec fox named Daisy just moved in, and a male will join her later this year. Sarro is particularly excited about the fennec foxes. "They have huge ears, and they're perfectly adapted to their environment. They're very personable, charismatic animals," Sarro says. "And they just couldn't be any cuter."

If there is anything cuter than an adult fennec fox, it's a baby fennec fox—and the Zoo is hoping to welcome some of those before long.

Another reason the staff is excited about the fennec fox—beyond its cuteness and conservation—is that it is the only canine in the Small Mammal House.

Far from housing only rodents, the 40 exhibits in the Small Mammal House hold primates, small carnivores, a few birds, a cat, a marsupial, and even some animals whose closest relatives are elephants.

The marsupial is the brush-tailed bettong—the only marsupial currently living at the National Zoo. A cursory glance might dismiss it as a small, brown rat-like

creature, but a closer look reveals a striking animal—one that's critically endangered in its native range in Australia.

"They look like miniature wallabies," says Kerns. "Which is crazy, because wallabies look like miniature kangaroos as it is."

The cat is a sand cat called Thor for his lovely blond coat. Sand cats are native to Africa and the Arabian Peninsula. A female will be joining Thor soon, with hopes for sand cat kittens in the near future.

Hidden Gems and a National Treasure Like the bettong and many of the other animals at the Small Mammal House, the sand cat is typically nocturnal.

"Night is when these small animals can avoid predators," Kerns says. "In our building, a lot of them will calm down and realize there's no predator, and then they're up and active a lot more during the day than they are in the wild."

But sometimes that does mean you have to look a little to find the animal or you'll miss it.

A lot of people, for example, miss the animal in the next enclosure: the shorteared elephant shrew. Related more closely to elephants than to shrews, it weighs in at a tiny one to 1.5 ounces fully grown. The Zoo has a history of breeding these animals, which are around a quarter of an ounce when they're born. "They're the size of a cotton ball with legs, a nose, and a tail," says Kerns. But they're not babies long; within 45 days they are sexually mature adults.

Just a few enclosures down is a living legend. Curled up at the back of an exhibit (kids may have to stand on their tiptoes) is a black-footed ferret. Once thought extinct in the United States, ferrets were rediscovered in the 1970s. The Zoo was crucial to the success of their breeding and reintroduction into the wild, and now North America's only native species of ferret once again lives where the buffalo roam.

Black-footed ferrets are still endangered in the wild, but they're also rare in zoos. Only a handful of zoos have them on exhibit. In fact, that goes for many small mammals. While small mammal houses were once common in zoos, fewer and fewer are left. This makes the National







Zoo's Small Mammal House all the more exceptional and important.

"A lot of people don't realize how conservation issues affect the small things," says Kerns. "They're affecting the little guys just as much as the big guys. The main messages are 'save pandas, save elephants.' And we completely agree with that. Those

Short enred elephant shews, black-footed ferrets, and Thor the sand cat are among the many unusual animals to be seen in the Zoo's Small Mammal House.

small mammals, big deal

are flagship species. If you save panda habitats, you're saving habitats for all the small mammals there too."

Rodents of Unusual Appearance

Around the corner from the black-footed ferret are some of the most remarkable animals in the Small Mammal House: the naked mole-rats.

"There are two extremes," Kerns says. "There are people who see them, read 'rat,' on the sign and want nothing to do with them. They fly past as if a mouse is chasing them. And then there are people who go 'GASP! The naked mole-rats! I have been looking forward to this all day!"

Naked mole-rats are intriguing, even if not your cup of tea. The only truly eusocial mammal, they live in colonies with queens, like bees. They live underground full-time. They can live to be more than 30 years old. Only the queen breeds, and when she does, she gets longer rather than wider so she doesn't get wedged in her own burrows.

Compare the naked mole-rat—wrinkled, blind, pink—with the nearby giant jumping rat: large, brown, and athletic. Native to Madagascar, and nocturnal, jumping rats are endangered. They're also an excellent example of the Small Mammal House's mission, says Kerns. "The Small Mammal House is one of the few places at the Zoo where you can see how species changed as they spread across the world and adapted to all these different environments."

Celebrity Sighting

Just across from the naked mole-rats are some instantly recognizable critters: meerkats. "They're a staple," Kerns says. "They play, they're very curious, they stand on their hind legs, and they're almost always moving. Everyone loves to see them. It's always a good day when you see a meerkat."

The other superstar of the Small Mammal House is the sloth, who lives in the big corner exhibit with a bunch of other species, including golden lion tamarins. He doesn't move much, but even when just hanging around sleeping he fascinates visitors.

Another animal that fascinates zoogoers looks like a squirrel with a

fancy dye job. In fact, that's practically what it is. Native to Southeast Asia, the Prevost's squirrel is almost identical to the wild ones scampering around Rock Creek Park. The biggest differences between the species are their coloration and the fact that North American squirrels hibernate.

Missy Hawkins a geneticist with SCBI is studying the genetics of Prevost's squirrels, and three other species to learn about how the topography and geography of Indonesia has changed and evolved.

Family-Friendly

The Small Mammal House is unique on another level as well.

"This building is incredibly familyfriendly," says Sarro. "One of the amazing things about the Small Mammal House is that so many exhibits are low to the ground. Kids can see animals without Mom and Dad having to pick them up. The animals are right at a child's eye level."

The Small Mammal House isn't just good for young humans: It's also a good spot for animal babies.

"That's the awesome thing about the Small Mammal House for a visitor," says Kerns. "You can't come back and have the same experience twice.



ABOVE: Naked mole-rats owe their unusual appearance to their subterranean habitat. **RIGHT: Screaming hairy armadillos get their**



Clark, the Zoo's male prehensile-tailed porcupine, was recently introduced to a young female, in hopes that prehensiletailed porcupettes—baby porcupines will follow sometime this year. Similarly, a new red-ruffed lemur has just arrived with a breeding recommendation. Baby red-ruffed lemurs would be a major conservation success; the species is critically endangered in the wild.

New Kids on the Block

Not all the new residents at the Small Mammal House are babies. Clementine and Trixie, two of the Zoo's newest residents, are striped skunks. Sarro explains that they help teach people that really cool animals live right in their own backyard. The skunks will also participate in the Meet a Mammal program, a daily opportunity for visitors to see a small mammal up close.

CLOCKWISE FROM RIGHT: Prevost's squirrels, redruffed lemurs, slender-tailed meerkats, and Linnaeus' two-toed sloths can all be seen in the Small Mammal House.

Three other new arrivals to the National Zoo are bound to attract attention for their names: the screaming hairy armadillo, greater mouse-deer, and tamandua (coming this spring). The screaming hairy armadillo, as its name suggests, is hairier than most armadillos and hollers when disturbed. The mouse-deer is an ungulate a hooved animal—that stands only 12 to



14 inches tall. And the tamandua is an arboreal anteater with a prehensile tail. These animals, all fascinating in their own right, only increase the diversity and attraction of the Small Mammal House.

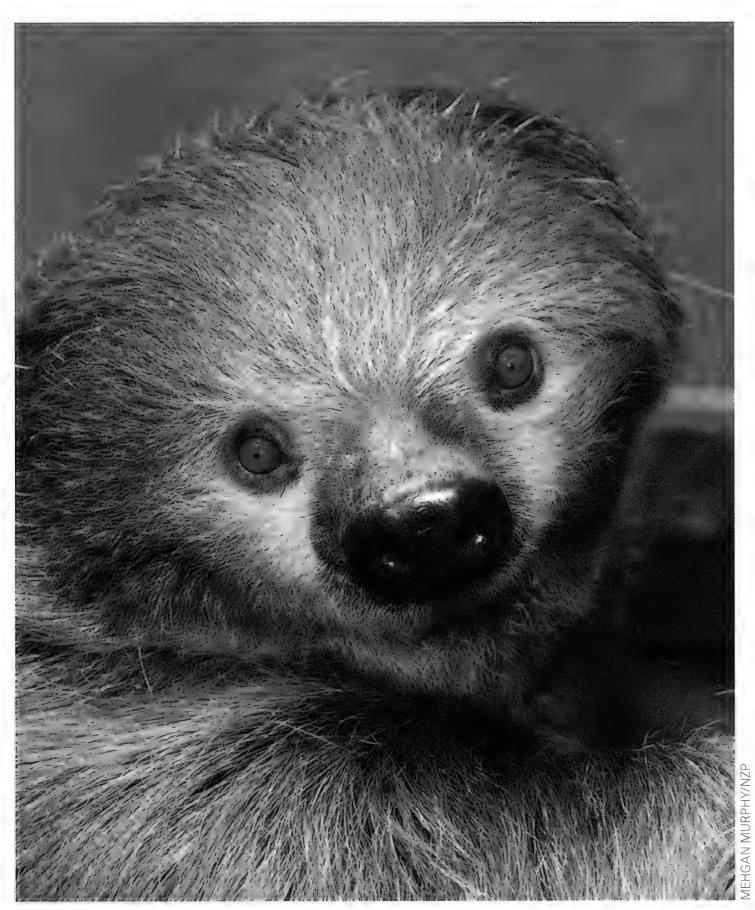
"Every zoo you go to, you're going to see a lion," says Sarro. "But you're not going to see a tamandua at every zoo."

Keep an eye on the Small Mammal House—new species and new babies will continue to arrive.

"That's the awesome thing about the Small Mammal House for a visitor," says Kerns. "You can't come back and have the same experience twice. There's so much going on. What you see changes with the time of day and the time of year. That's what makes the Small Mammal House so unique and so fun."

Sarro agrees: "Nobody goes away disappointed." SZ

—BRITTANY STEFF is an editor for the Zoo's website and a veteran contributor to Smithsonian Zoogoer.







Nightmares are made of this: In May 1982, a pair of cheetahs arrived at Wildlife Safari, an accredited zoological park in Oregon and a leader in breeding the spotted cats, long notorious for their reluctance to reproduce in human care. With them came an uninvited and decidedly unwelcome guest: the feline infectious peritonitis virus.

Despite the park's taking the precautionary steps prescribed at the time, the virus spread via fecal transmission. It tore through Wildlife Safari's cheetah population, which contained more than 40 cats. Ninety percent became infected. Sixty percent died in the next few years.

The ordeal of Wildlife Safari has become a cautionary tale for anyone charged with the well-being of zoo animals. It underscores the importance of a vital stage in bringing a new inhabitant to the Smithsonian's National Zoo—quarantine.

Protect and Observe

Quarantine, explains veterinarian Copper Aitken-Palmer, is "a biosecurity measure to prevent disease transmission." She leads the veterinary team at the Smithsonian Conservation Biology Institute in Front Royal, Virginia. SCBI is home to one of the world's most important collections of endangered animals.

Don Neiffer, the Zoo's chief veterinarian, identifies two paramount purposes for quarantine. "Most important," he says, "it safeguards our current animal collection." The Rock Creek campus houses nearly 1,800 animals from some 300 species, many of them endangered. A biosecurity threat to them could be catastrophic.

Quarantine's second benefit, Neiffer says, is providing an opportunity to "determine

the special needs of new animals." Exams and daily scrutiny help vets discern whether a new Zoo resident has any chronic conditions, such as arthritis. While it's not contagious, arthritis takes a toll on well-being, so animal-care staff need to address it.

A Place Apart

The most important aspect of quarantine is keeping the incoming animal or animals completely separate from the rest of the Zoo's living collection. Normally, new arrivals at the Zoo go straight to the animal hospital, where they're placed in one of three enclosures: the orange room, the blue room, or the green room.

That sounds simple. It's not. "It's a complicated business," says Bird House curator Sara Hallager, who also serves as the Zoo's quarantine coordinator. She tracks which creatures are entering and leaving quarantine, making sure there's an appropriate space available along with ensuring that hospital staff have adequate time to scrub down and disinfect the room, then outfit it for the needs of its next occupant. The whole process is "very choreographed," she observes.

The orange, blue, and green rooms can't accommodate every animal. Elephants, gorillas, bison, tigers, and lions are among those too large to quarantine at the hospital. Japanese giant salamanders and



Adding an animal to the National Zoo's collection takes rigorous planning—and keen scrutiny.

BIOSECURITY



Many residents of the Reptile Discovery Center, such as this eyelash palm pitviper, are quarantined for 90 days.

BY PETER WINKLER

THE BATTLE FOR BIOSECURITY

crocodilians require pools of water at very specific temperatures. Fish need tanks.

In such cases, animals are quarantined in set-aside, out-of-view spots in the pertinent exhibit area. The elephants that joined the Zoo population in 2014 lodged in a specially constructed quarantine section of the elephant barn. Kavi, a Sumatran tiger who came to Rock Creek in 2012 from Zoo Atlanta, stayed in a "physically separate" enclosure that is also used when cats are pregnant, explains Great Cats curator Craig Saffoe.

Last fall, amid much excitement about the Zoo's 125th anniversary, two American bison settled into an exhibit along Olmsted Walk. They were quarantined in their new home but screened from view. That was possible for two reasons. First, they were the of being a risk to the Zoo's population. The ultimate factor determining the length of quarantine, says Neiffer, is "however long it takes to feel good about moving the animal to its new home."

Entrance Exams

During quarantine, vets check on the new animal daily. Each arrival also undergoes a thorough medical exam. Veterinary staff palpate its body, looking for any worrisome abnormalities. They listen to its heart and lungs. They record its weight and administer any necessary vaccines. They take radiographs and, in some cases, ultrasounds.

The Zoo's pathology lab also plays a key role in assessing the health of each new animal. They analyze blood, blood plasma, feces,

The Rock Creek campus houses nearly 1,800 animals from some 300 species, many of them endangered. A biosecurity threat to them could be catastrophic.

only members of their species at the Zoo. Second, the yard was far enough away from other animals' enclosures.

Thirty Days?

Quarantine at the National Zoo lasts for 30 days, except when it doesn't. A month of animal isolation is a widespread practice, endorsed by the Association of Zoos and Aquariums. That time-frame, Aitken-Palmer explains, grew out of the life cycle of parasites. A 30-day window gives veterinarians sufficient time to detect—generally through exams, blood work, or fecal analysis—any stowaways aboard a new arrival.

Usually. Snakes need 90 days, reports biologist Matt Evans of the Reptile Discovery Center. That's due to their risk of hosting paramyxovirus, which wreaks havoc on the respiratory system. "Lots of snakes are susceptible" to this untreatable virus, Evans explains, "so zoos err on the side of caution." Paramyxovirus can elude detection in blood and feces, so the longer quarantine enables vets to watch whether an animal becomes symptomatic.

Veterinarians may also extend an animal's quarantine if the newcomer shows any signs

and sometimes urine to search for parasites, antibodies (which can indicate that an animal has been sick), and other signs of trouble.

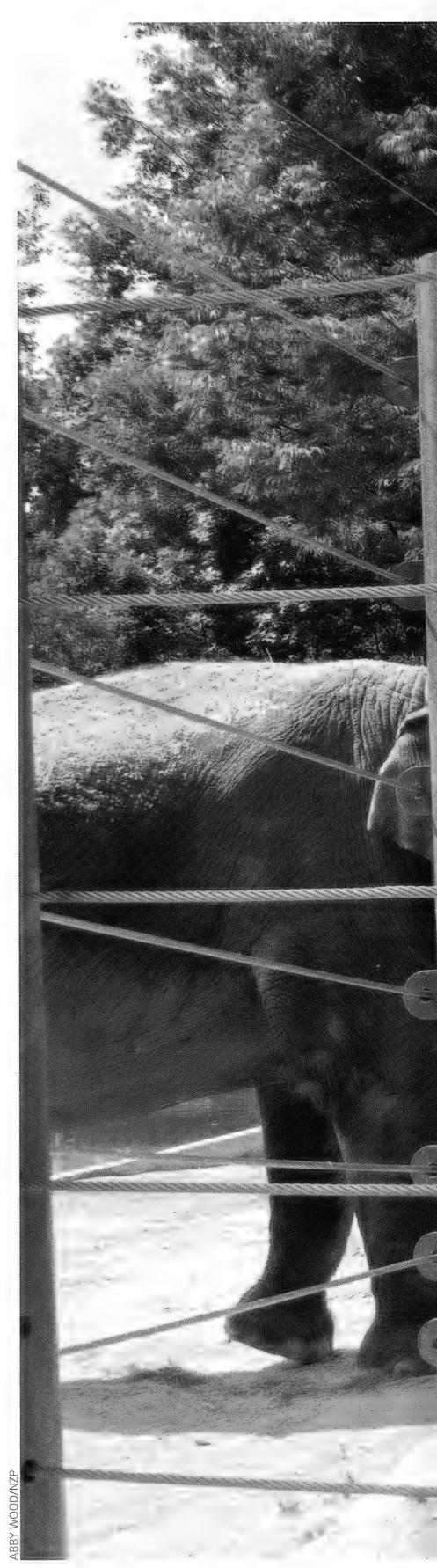
Few animals, of course, would put up with such poking and prodding while awake. So almost all entrance exams are conducted under anesthesia. That requires getting an anesthetic into the animal.

No mean feat, that. Now and then, a vet has the good fortune to examine an animal that's been trained to present its arm for an injection. More often, someone must safely restrain the patient. Depending upon the situation, that task may fall to a keeper or to the veterinarian.

Tranquilizer darts are the most common method of calming large animals. Administering them takes good aim—and a lot of patience. Neiffer learned that earlier in his career, trying to sedate an orangutan named Lucy.

There was a blanket in her enclosure, and Lucy lost no time before deploying it as a shield. Each time Neiffer aimed at a different part of her body, she shifted the blanket to block the dart. It took many attempts before Neiffer successfully sedated her.

Neiffer may get the opportunity for a rematch. By odd coincidence, Lucy





THE BATTLE FOR BIOSECURITY

later moved to, yes, the National Zoo. A veterinarian's life is famously difficult to predict, but one thing's certain: There will be no blanket around the next time Neiffer needs to sedate Lucy.

Actually, Neiffer hopes not to need a dart at all. The Zoo's great apes are learning to accept injections through positive training techniques.

Nets are an oft-used tool for safely catching smaller animals. Peter Flowers and Marilyn Small, quarantine techs at the hospital, are known throughout the Zoo for their netting prowess. Another technique is to lure the patient into a restraint chute—a pen that slowly grows smaller and smaller until the animal is gently held in place. The veterinarian can then approach and inject the anesthetic.

In some cases, anesthetic can be administered without a needle. Small animals may be picked up and placed into an induction box—a glass or acrylic rectangle that looks like a fish tank with hoses attached. Once the animal is settled, the vet pumps gas into the tank, leading the patient gently to sleep.

Then there's Amazonia, where fish are quarantined in dedicated tanks behind the scenes. Few of these techniques would work there, especially with small fry. No problem, says curator Lee Jackson. Animal-care staff add chemicals to the water, anesthetizing the fish right where they are. The ability to do that comes in handy at an exhibit that generally brings in groups rather than individuals. One recent batch of quarantined animals, Jackson notes, occupied ten tanks.

Managing the Menu

Less dramatic but no less important than the veterinary exams is the quarantine task awaiting the Zoo's nutrition team. They face the challenge of evaluating each newcomer's previous diet and deciding whether to adjust it.

They usually do, says nutritionist Mike Maslanka. About 50 to 75 percent of the time, the change is fairly substantive. Two reasons—science and supplies—underlie most menu tweaks.

Science first. National Zoo residents benefit from a rarity in American zoos: clinical nutritionists focused on providing the best science-based diets. Not surprisingly, their expert eyes often spot room for improvement in a new animal's diet.

Truly the biggest example of that was Nikki, an Andean bear who arrived at the Zoo in 2007. At the time, he was grotesquely overweight. Zoo nutritionists swiftly mapped out a plan for slow but steady weight loss. In his first year at Rock Creek, Nikki shed 150 pounds. He grew far more active, even fathering cubs in 2010 and 2012. He remained vigorous until succumbing to cancer in 2012.

Supply issues arise when new arrivals are accustomed to items—such as particular brands of pellet or biscuit—not found in the Zoo's cupboard. Fortunately, such mismatches are discovered long before arrival, thanks to regular communication between the sending and receiving zoos. Often the nutrition team asks the animal's old home to send along a stash so that they can gradually alter the makeup of the creature's diet.

A supersize supply issue faced Maslanka and his colleagues when a trio of Asian elephants arrived from the Calgary Zoo last May. Elephants eat hay, lots of hay, and the newcomers were used to a whole different species of hay than the National Zoo serves or even stocks. Each variety, Maslanka explains, has a distinct "nutrient profile," so a simple swap was out of the question. Thanks to hay from Canada, the nutrition team was able to change the elephants' palates incrementally and successfully.

Quarantine is the perfect time for such successes, Maslanka says. The animal is under intense, daily scrutiny, which includes regular weigh-ins. So the nutrition team knows almost instantly what's working—and what is not.

Busy Month

Thirty days may sound like a long time. But for quarantine animals—and staff—those are crowded hours, filled with rigorous observation, painstaking examinations, laboratory tests, enrichment, menu mechanics, and plenty more. Each of those hours and activities is an investment in biosecurity and health, for both the new arrival and its new home.

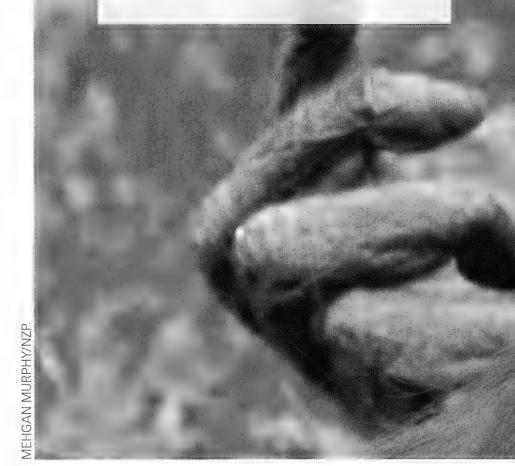
—PETER WINKLER is the editor of Smithsonian Zoogoer.

Where Is Everyone?

"With social animals, including most primate taxa," says primates curator Meredith Bastian, "we would recommend quarantining animals together if they are coming from the same group or facility and this is feasible." But what happens when it's not feasible?

"That's a challenge," says chief veterinarian Don Neiffer. For a flamingo or other social bird, placing a mirror in the enclosure can provide "a sense of flock." But then, as Neiffer points out, "it's easy to fool a bird."

Primates are tougher to trick. In such cases, both Bastian and Neiffer stress the importance of enrichment activities some based on food, some not—for isolated animals. These occupy the newcomer's attention and provide a sense of community with the quarantine staff, lowering anxiety and boosting well-being.





Big, Black Eyes

Giant pandas drive people wild. Perhaps you've noticed. Other bears don't have anywhere near the same effect. One possible reason for panda-monium is the beloved bears' dramatic coloring. It makes the animals look cuddly and clownish rather than dangerous. And the patches of black fur on the face make their beady eyes look large and babylike. You can see giant pandas—and their many fans—on Asia Trail.



Black, winde, and Mar

Smews are small ducks that nest in trees across northern Europe and Asia. The drakes, or males, are snowwhite with thin black stripes on their backs and big black patches around their eyes. As a result, people often refer to the birds' "panda appearance." Smews feed by diving into water to catch fish. Fly by the Bird House to see smews.



A zebra's stripes may seem to make it stand out, but the opposite is true. When zebras stand together in a group, their stripes make it hard for predators to pick out-and pick off-an individual animal.



Meet the 2005 Navy Haso Doc

Taking care of all the animals at the Zoo can be a tough job. Don Neiffer, the Zoo's new chief veterinarian, is up to the task.

eiffer's desire to become a veterinarian developed slowly. When he was young, drawing was his passion. Over time, Neiffer became interested in biology and animal science, and loved to be out in the wild. During a summer program as an intern at Zoo America, "something just clicked," Neiffer said. "It was like 'Boy, this would be really cool to do." He had a new goal: to become a veterinarian at a zoo.

After finishing school, Neiffer went to work at the Pittsburgh Zoo and Aquarium and the National Aviary. He eventually became veterinary operations manager for the animal programs at the Walt Disney World Company in Florida. The job provided many opportunities and experiences, and he got to work with a wide variety of animals. But Neiffer wanted to return to his roots in the Mid-Atlantic. So when the chief veterinarian position at the Zoo opened, he pounced on it.

An Unusual Job

Working as a vet at many different institutions, Neiffer has had his fair share of interesting encounters with animals from all over the world. He's treated everything from massive elephants, to tiny and rare Micronesian kingfishers.

Sometimes treating and studying animals comes with awkward moments, such as having your pants almost torn off by an animal, or trying to catch a patient as it runs off through your lab.

There can be some dangerous moments too. Neiffer has been bitten before, although the culprit isn't always an animal you'd expect. For example, at a previous job a chameleon once bit him hard enough to draw blood.



Despite the challenges, Neiffer loves caring for animals, especially at the Zoo. The wide variety of species he works with is a thrilling part of the job. "In the morning you could be working on a tiger and then go to a kiwi and then go to a small songbird and then a crocodile and then an elephant," Neiffer said, "all within a few hours."

Not all of these animals are easy to work with. Porcupines are hard to perform surgery on, for example. Even the site of the surgery can be an issue. "If you put a porcupine on its back on a circulating water blanket to keep it warm during a procedure, the blanket will leak when you're done," Neiffer noted.

Other animals are surprisingly easy to work with. Lions and tigers can be trained to voluntarily give blood samples, making many procedures much easier. Many of the larger birds are also good patients. And Mei Xiang, the Zoo's female giant panda, knows to lie still for ultrasounds.

Looking Ahead

Neiffer is new to the National Zoo, but he is already looking toward the future. For example, he'd like to get the veterinary staff more involved in research at the Zoo. Overall, he wants his staff to work hard and enjoy their work: "We can do a good job, enjoy work, and have some fun doing it."

—DEVIN MILLER



All-AMERICANS

Striped skunks live throughout the lower 48 states, across the southern half of Canada, and in northern Mexico. They've been described as one of the best-known mammals of North America. Fond of open spaces, striped skunks actually expanded into new areas as forests fell to clear farmland.

FANCY Furs

Striped skunks get their name from their coloring. Bold white stripes run from the animal's face to its tail, providing a stark contrast with the black fur covering the rest of the body. The length and width of the stripes varies by animal.

I'll Eat ANYTHING

Far from picky, striped skunks are omnivores. That means they'll eat almost anything: insects, small mammals, birds' eggs, fish, corn, berries, and more. The skunk's thick fur protects it from stings while snacking on honeybees.

FAIR Warning

Quiet and shy, striped skunks aim to avoid trouble. That's not always possible. When another animal comes too close, the skunk tries to scare it away by arching its back, raising its tail, and stamping the ground. Most animals get the message.



ZOOGOET SINTHSONAN ZOOGOET SINTH

Making A STINK

Any animal that sticks around after being warned is in for a nasty surprise. The skunk lifts its tail and sprays the intruder with musk, a strong-smelling substance. If the musk lands in an animal's eye, it can cause sharp pain and temporary blindness. Even if that doesn't happen, the smell drives off most creatures. Striped skunks can spray targets up to ten feet away.

WHAT Smell?

Predatory mammals generally steer clear of skunks. A creature has to be pretty hungry to risk getting sprayed! Birds, though, don't seem to mind the musky odor. So owls and eagles prey on striped skunks. Great horned owls are the skunks' major predators.

At the ZOO

Step into the Small Mammal House to meet Trixie and Clementine, the Zoo's striped skunks. These lovely ladies were born in May 2014 at a breeding center in Pennsylvania.



By studying the types of cells in an animal's eye and conducting experiments, scientists get a sense of whether an animal sees in color or black-and-white. That can make a big difference to what it notices about other animals. If you have a camera, try taking photos of the same scene in both color and black-and-white. How does your ability to see things vary from picture to picture? Let us know at zoogoer@si.edu.

EONZ

FONZ RESOURCES

fonz.org

Member/Donor Information 202.633.2922

Special Events 202.633.4470

Corporate Events 202.633.3045

Camps and Classes 202.633.3024

Volunteer Services 202.633.3025

Comments? Questions?

Please email us at fonzmember@si.edu

Not a FONZ member yet? Call 202.633.2922 or go to fonz.org/join

FONZ Classes

Our teachers are real bears—and lions and otters and owls!

Students learn about animals, science, and conservation through hands-on activities, crafts, and tours around the Zoo.

FONZ classes deepen your child's understanding of animals, life science, and environmental conservation. Whether you prefer a regular, weekly experience with your child or a one-time event for the family, we have options to suit your needs.

Please note: Classes do not include behind-the-scenes visits or direct contact with the animals, but do use touchable artifacts (pelts, bones, feathers, etc.). For everyone's safety and enjoyment, unregistered children may not attend, with the exception of non-crawling infants.

Learn more and register online: fonz.org/classes

FONZ Members Save

Use code BISON2015 to claim your FONZ member discount at checkout. fonz.org/classes

Weekday Class Series:

\$150 per person (FONZ members) \$187.50 per person (non-member)

Weekend Classes:

\$28 per child (FONZ members) \$35 per child (non-member)

Home Education Programs:

\$150 per person (FONZ members) \$187.50 per person (non-member)

Special Events:

\$28 per person (FONZ members) \$35 per person (non-member)

WEEKDAY CLASS SERIES

Our weekly classes invite children to discover animals and the natural world while strengthening academic, developmental, and social skills.

Backyard Buddies

Discover the Zoo in your own backyard this spring! Each week, we will explore a different animal group and learn about a new animal friend that makes its home in the same place we do.

AGES: 2–3 (with adult) **TIME:** 10–11:30 a.m. **DATE:** April 27–June 1

(M, T, W, Th, or F sessions)

Magic Zoo Bus

Where will the bus take you? All around the Zoo! Hop onboard to visit some of the Zoo's newest arrivals and see what Zoo scientists are doing to help save these species.

AGES: 4–6 (with adult)
TIME: Tuesdays, 1–2:30 p.m., or Fridays, 3–4:30 p.m.

DATE: April 28-May 29

MEHGAN MURPHY/NZP

HOME EDUCATION PROGRAMS

For the 2014–2015 school year,
Home Education Programs at the
National Zoo explore a variety
of global ecosystems. Each
curriculum unit gives learners
the opportunity to build a deep
understanding of a new region
and the animal communities it
supports. Science experiments,
inquiry-based learning, and Zoo
walks will address core ideas
defined by the Next Generation
Science Standards.

Folk-Tails

Fables and folktales from around the world provide clever explanations for some amazing animal adaptations. We'll travel around the globe and through the years to discover some "storied" species, then learn how we can help these animals live happily ever after.

AGES: 6-12

TIME: Thursdays, 10 a.m.—noon

DATE: April 30-June 4 (no class May 21)



FONZ CLASSES

CLASSES FOR ADULTS TOO!

Fun and wild classes aren't just for kids! Register and learn more online: fonz.org/adultclasses

WEEKEND FAMILY PROGRAMS

FONZ's Weekend Family Programs are single classes designed for children and their parents to enjoy together. Interactive stations introduce participants to featured animals and concepts, then a hands-on discussion gets you ready to visit the animals of the day! At least one adult must be present for every two children per group registration.

In Like a Lion

Roar into spring with the pride of the National Zoo: our lion pride! These feisty felines are ready to show you why they really are the tops—top predators, that is! Pounce on this class today.

AGES: 4-7 10-11:30 a.m. DATE: Mar. 7 or 8 (choose one date)

Curious George Goes to the Zoo

Curious George is a curious little monkey who loves to explore, just like the monkeys in the Small Mammal House. We'll learn about some of their special features that help them make mischief, then put on our yellow hats and pay a visit to some of our favorite pint-size primates!

AGES: 2-3 TIME: 10-11:30 a.m. **DATE:** Mar. 14 or 15 (choose one date)

Old McDonald Had a Zoo

E-I-E-I-O! And on the National Zoo's Kids' Farm, sponsored by State Farm®, we have a pig, a cow, a goat, and much more! Join us as we meet your favorite farm animals and learn to walk and talk like each animal. Register for one class or join us each week!

AGES: 2-3 10-11:30 a.m. DATE: April 4 (goats) April 11 (donkeys) April 18 or 19 (cows) April 25 or 26 (pigs)

Panda-monium

Pandas may look black and white, but they are pretty colorful characters. Explore the hidden world of these beautiful bears, then visit the Zoo's most famous family: Tian Tian, Mei Xiang, and Bao Bao.

AGES: 4-7 TIME: 10 a.m.-noon DATE: May 2 or 3 (choose one date)

Happy Mother's Day!

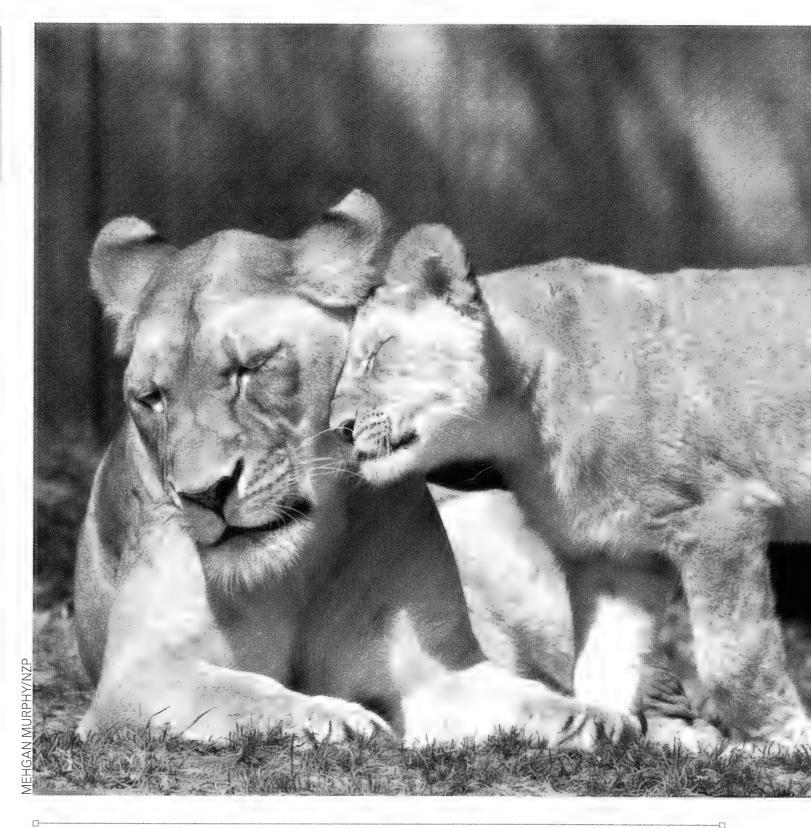
Celebrate Mother's Day at the Zoo and make a special gift for the mom in your life! We'll visit some favorite Zoo mothers and babies, and will learn about the extraordinary ways animals keep their babies safe.

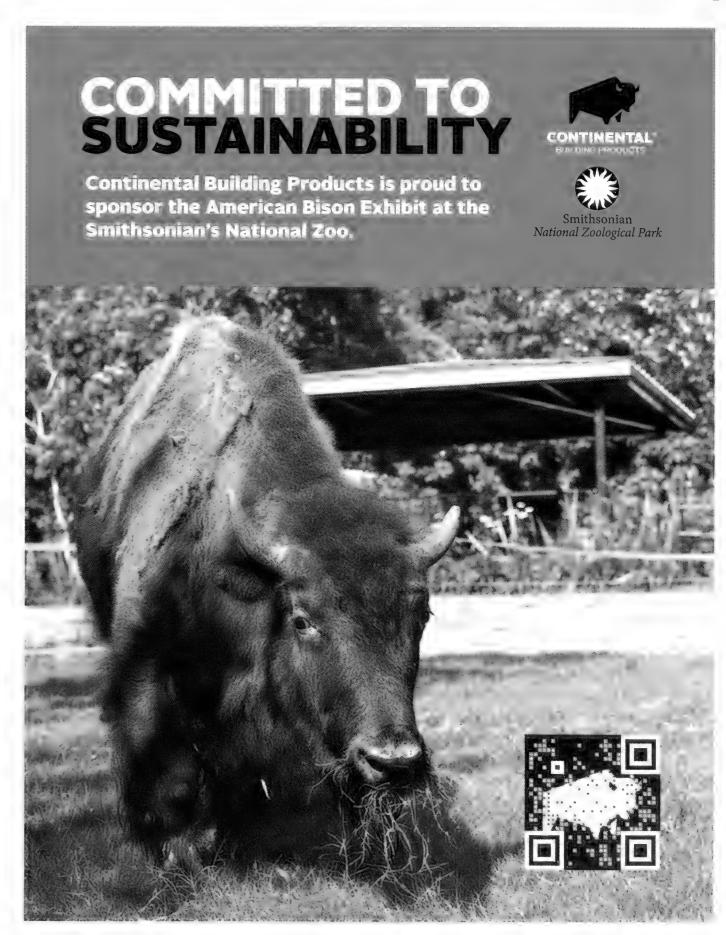
AGES: 2-3 TIME: 10-11:30 a.m. DATE: May 9 or 10 (choose one date)

Friendly Frogs and Terrific Turtles!

The weather's warming up, so let's cool down with some of the Zoo's coldblooded critters! The frogs and turtles of the Reptile Discovery Center are ready to help you leap into learning. Dive in and find out why it's so cool to be cold!

AGES: 2-3 TIME: 10-11:30 a.m. DATE: May 16 or 17 (choose one date)





SPECIAL EVENT: Birdhouse Building

The birds are back in town! Many birds are just finishing their great migration and flocking back to our area. Greet them with a nice new home that you built yourself! Bring a parent and your can-do attitude; we are building real birdhouses that will bring wildlife to your yard for years to come. Note: This class

will involve using tools like hammers and nails. Each child must be accompanied by an adult partner. There is no additional fee for the adult partner.

AGES 5-10 TIME 10 a.m.—noon March 28

FONZ SUMMER **SLEEPOVERS**



This isno ordinary camping trip

Imagine falling asleep to the sound of wolves howling or being awakened by the bark of sea lions at play. That might happen when you spend the night at the Zoo!

Pitch your tent on Lion/ Tiger Hill and prepare for a wild time! Your overnight begins with an exclusive keeper-led tour of an exhibit area. Throughout the event, you'll enjoy games, activities, a walk through the Zoo, and a breakfast snack.

There are two Snore & Roar options, one for families, and one for adults-only. Adults without children may register for either; however, please be aware that the educational activities associated with the family programs are geared toward groups with children. If you prefer a more mature audience, we recommend an adult-only program.

Snore & Roar overnights take place between June and September. A maximum of 12 participants may be signed up per registration. Snore & Roar campers sleep in four-person tents. Participants are never asked to share their tent with strangers.

Find a schedule and register online:

fonz.org/snoreandroar

AGES: Adults and children ages 6 and up. All children must be at least 6 years old by the date of the program. No refunds will be granted for registrations involving children under 6 years old.

A paying adult must accompany children under 18, and there must be one adult chaperone for every three children. Participants in adult-only overnights must be 21 or older.

TIME: 6 p.m. to 9:30 a.m. the following day. A small snack will be provided; however, participants should eat dinner before coming to the Zoo. All Zoo restaurants close at 5 p.m.

REGISTRATION: Register online at fonz.org/snoreandroar

March 31: Priority registration for Premier+ and above level FONZ members starts at 10 a.m.

April 7: Registration for all FONZ members begins at 10 a.m.

April 14: Non-member registration opens at 10 a.m.

SNORE & ROARS ARE NOT JUST FOR KIDS! Adult-only programs include a keeper-led tour of an exhibit area, wine and cheese, activities, a guided tour of the Zoo, and a breakfast snack.

Find a schedule and register for an adult-only Snore & Roar online: fonz.org/snoreandroaradults

Tours:

Enjoy an exclusive, keeper-led tour of one of the following areas. All prices are per person. Find tour dates and more online: fonz.org/snoreandroar

American Trail Join us on an adventure to celebrate the remarkable diversity of American species. Your keeper-led tour will take you from the waters of the North Pacific and a visit with our playful California sea lions on up the trail past the canine predators of the open tundra through to the renowned architects of fresh water systems, the American beavers.

FEE: MEMBER: \$130 NON-MEMBER: \$162.50

Asia Trail Wonder where those adorable Asian small-clawed otters go at night? Join us for an Asia Trail Snore & Roar and find out! You'll tour around the trail with front-of-house views of the elusive clouded leopards. See the slurping sloth bears and sneak a peek at Mei and the family with a stop at giant pandas. Please note: We cannot guarantee that Bao Bao will be visible.

> FEE: MEMBER: \$130 NON-MEMBER: \$162.50

Bird House The sights and sounds of the Bird House are not to be missed! Visit with your favorite feathered friends, and learn about the incredible diversity of birds from the keepers who know them best.

FEE: MEMBER: \$80 NON-MEMBER: \$100

Cheetah Conservation Station Are you fast as a cheetah? Can you dig like a hog? How does your wingspan compare to a vulture's? Here's your chance to find out. Meet the cheetahs and some of their African neighbors. See how the Zoo's keepers train the zebras, and explore where it all comes together behind the scenes.

FEE: MEMBER: \$130 NON-MEMBER: \$162.50

Great Cats and Kids' Farm

Lions and tigers and cows, oh my! It's carnivore meets herbivore in this dual action overnight experience. Learn all about our feline royalty and see how keepers care for these majestic, big cats. Then moooove on over to Kids' Farm, sponsored by State Farm®, and receive a hands-on lesson in how to care for farm animals here at the Zoo

FEE: MEMBER: \$130 NON-MEMBER: \$162.50

Reptile Discovery Center

A place where dragons still roam and alligators call home. Join us for one of the most interactive behind-the-scenes experiences available at the Zoo. You'll see tortoises grazing, and will get up close and personal with some of the coolest and scaliest beings around. You don't want to miss it!

FEE: MEMBER: \$80 NON-MEMBER: \$100

Small Mammals There is never a dull moment at the Small Mammal House; with so many creatures there is always something to see! Join us for your chance to watch the sloths come to life, see enrichment at work, and meet a furry, little friend.

FEE: MEMBER: \$80 NON-MEMBER: \$100





FONZ



FONZ members only!

Bring your troop for a wild night they won't soon forget! Where else in D.C. can you fall asleep to the sound of wolves howling or be awakened by the bark of sea lions at play?

Your Scout Snooze includes an evening and morning snack; a 1.5-hour, keeper-led tour of an exhibit area; a variety of activities and games; and a guided tour of the Zoo.

Scout groups sleep in four- or six-person tents on Lion/Tiger Hill. Scout leaders are responsible for tent assignments.

Scout Snooze sleepovers are available to FONZ members only: To register, at least one adult per scout group must have a FONZ membership.

AGES: Children ages 6 and older. All children must be at least 6 years old by the date of the program. No refunds will be granted for registrations involving children under 6 years old.

A paying adult must accompany all children under 18; one adult chaperone is required for every three children.

TIME: 6 p.m. to 9:30 a.m. the following day. A small snack will be provided; however, participants should eat dinner before coming to the Zoo. All Zoo restaurants close at 5 p.m.

FEE: \$750 for up to ten people. \$75 for each individual above ten. Maximum of 20 participants total (adults included).

Find a schedule and register for a Scout Snooze online:

fonz.org/scoutsnooze



MAY IS MEMBER MONTH!

We will be celebrating you—our amazing FONZ members—the whole month of May.

Join us at the Zoo for special members-only events, activities, and discounts, such as:

- Animal enrichment activities
- Members-only mornings at animal houses
- Special discounts and giveaways
- And much more!

Visit our website in April for more information and an event schedule: fonz.org/membermonth

ZooLights 2014—Our Best Ever!

Thank you to each and every one of you who helped make our 2014 ZooLights, powered by Pepco, our biggest, brightest, and best ever. A total of 204,950 people came to our holiday light extravaganza, making 2014 the most-attended ZooLights ever! We surpassed our 2013 attendance numbers—our previous record—by more than 10 percent. Whether you visited once or many times, thank you for your support. We are already looking forward to seeing you again at our 2015 ZooLights.

We also want to send a loud and appreciative "thank you" to all the Friends of the National Zoo volunteers and employees—many of whom volunteer during some or many of their November and December evenings to support ZooLights who lent their time, energy, and passion to the event.



Thank you to our many sponsors, including our lead sponsor, Pepco.



Energy for a changing world.™

Big Bus Tours Capital One Bank®

Celebrity Cruises

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The Washington Post/KidsPost

Washingtonian Magazine.

Renew in May for Big Savings!

Join or renew your membership in May and receive two additional months for free. That's 14 months of great FONZ benefits for the price of 12!

Offer valid online (fonz.org/join) and at the Zoo.



April Is Kids' Farm Month!

GET DOWN ON THE FARM for "kid" friendly activities all month long. Don't miss special animal encounters with grooming opportunities, keeper talks and demonstrations, story times, special giveaways, and more! All presented by State Farm[®]. **Visit fonz.org/kidsfarm for daily schedules.**



ZOOVIEW



Basking Bison

They may be North America's biggest land mammals, but bison enjoy some of the same simple pleasures as their smaller compatriots, including a quiet moment of rest in the evening sun. That's the scene FONZ Photo Club member Risha Isom found on New Year's Day, 2015.

"I had gone to the Zoo with the intention of trying to do portraits of the animals," says Isom. "The bison were the last animals we came across late in the afternoon. They were peacefully relaxing on the ground, and I saw a wonderful opportunity to capture this profile."

Technical Notes —

CAMERA: CANON 7D MARK II; LENS: CANON 300MM F4

ISO: 500; **EXPOSURE**: 1/320 SEC AT F4

Submit Your Photos!

Smithsonian Zoogoer welcomes FONZ members' submissions of photos taken at the Zoo. Please send photos to Zoogoer@si.edu. We will contact you if we are able to use your picture for the Zoo View page.

Join the Club!

Membership in the FONZ Photo Club is open to photographers of all skill levels. The group meets monthly to hear guest speakers and to share and discuss members' work. Learn more at fonz.org/photoclub.







Smithsonian
National Zoological Park
Conservation Biology Institute



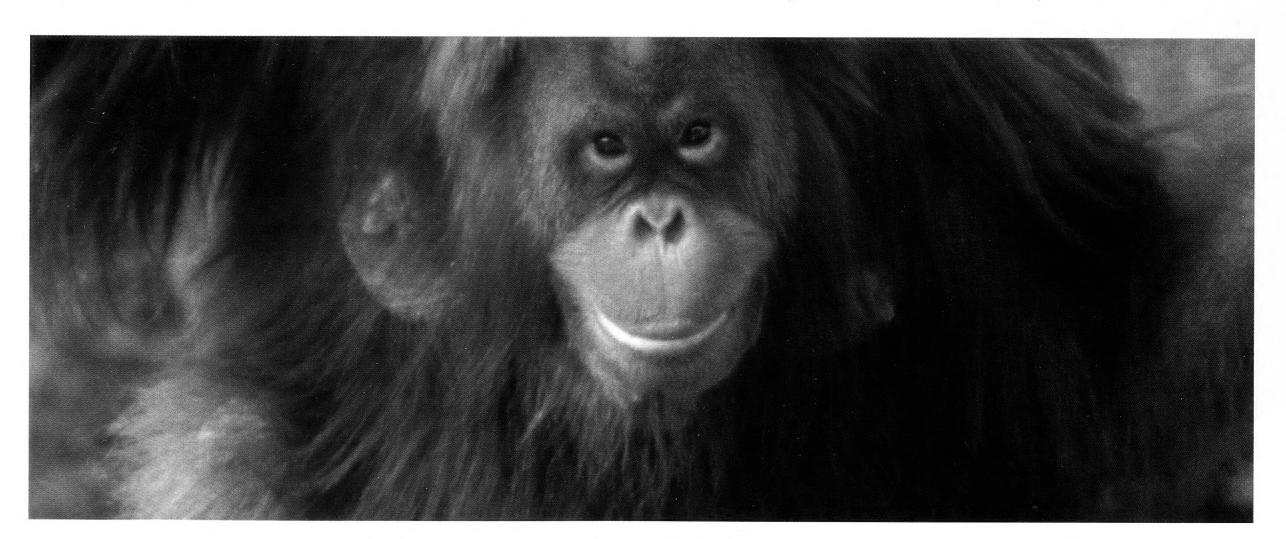
fonz.org/twitter



Your membership supports animal care, science, conservation, and more.



PARTY. MY PLACE.



HAVE YOUR NEXT OFFICE PARTY AT THE NATIONAL ZOO and it'll be far from your standard office affair. Not only will you have the wildest party in town, but you'll also help save endangered animals and habitats. Talk to your boss, HR, or the animal lovers in your office and reserve your date today. **Call 202/633-3045.**Special events at the Zoo's unique event sites support the Smithsonian's National Zoo as an unrestricted donation.